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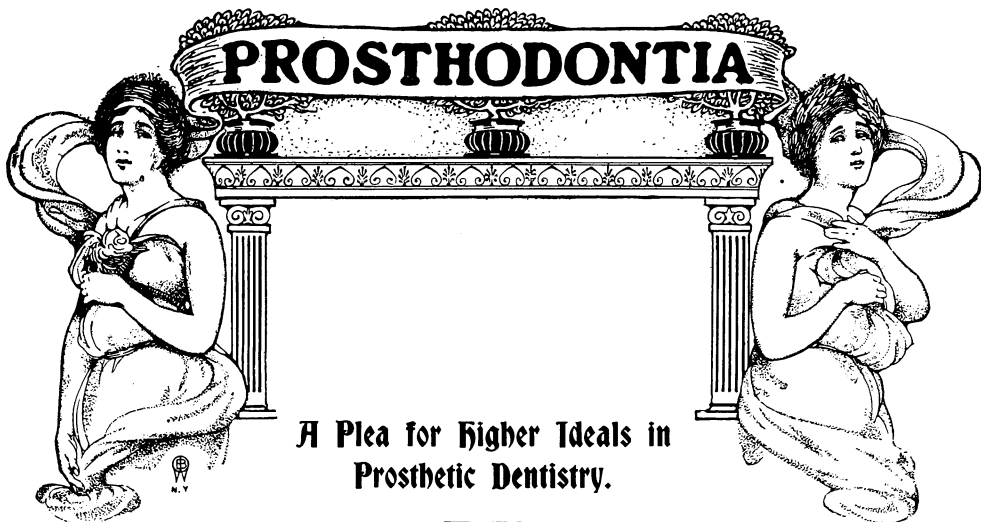
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Paper and Demonstration by Dr. S. C. G. WATKINS, Montclair, N. J.
Before the Central Dental Association of New Jersey, May, 1908.

I feel especially complimented on being invited to give this demonstration to-night, inasmuch as I gave a similar demonstration before this society two years ago. It was an evening on which Dr. Nyman, of Chicago, was to have appeared with a paper, and through sickness he was unable to attend, and at the last moment the officers of your society, after having seen my demonstration in my own office, invited me to fill in the evening in Dr. Nyman's place. It was a very stormy night, and but few present, but those who were, were intensely interested, and it was really a very great pleasure to me to give the demonstration. The stenographer reported the remarks of the evening; they were sent to me for correction; they were returned to the stenographer, who informs me that he turned them over to Dr. Smith, the secretary at that time; the secretary says he turned them over to the publisher, and the publisher says he never saw them. Consequently they were never published—apparently lost to the world. Now your officers have invited me to appear on this occasion and give you practically the same demonstration.

I purpose this evening to show you what I can, and if I may be of any aid in any way to any one of you in helping you to make better dentures, or more artistic ones, or more healthful ones, then I shall feel well

paid for my trouble. I purpose to lead you through the process of making rubber plates from the taking of the impression to the completion of the plate, including the natural or artistic arrangement of the teeth.

**Taking
Impressions.**

First we will start at the impression. In taking an impression for a full set, I always take it first with wax, and then I press the wax away a little from around the arch, or cut it out with a wax spoon so as to leave a little room for plaster. I then pour in the plaster, using the wax impression as an impression tray; press that very firmly in the mouth, holding it solid till thoroughly set, and the result is a perfect im-

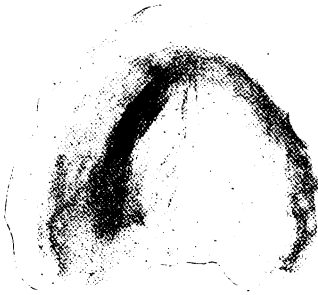


FIG. 1.



FIG. 2.

pression (Fig. 1). In a partial set I would always take an impression first in wax—then cut away the wax from around the remaining teeth, leaving room for plaster, as you will see in Fig. 2; then mold a piece of pink base plate wax around the remaining teeth in the mouth, as seen in Fig. 3; then pour plaster into the wax impression, carry that to the mouth and press it home firmly on top of the wax which is placed around the teeth, as you will see in the completed impression (Figs. 4 and 5). Then cast your model and scrape it well all over, so as to allow for the thickness of No. 60 tinfoil, and extra heavy wherever there are soft places. I generally scrape a broad groove about the eighth of an inch wide across the back of the model, and also where the mouth is soft on the sides of the roof, just about where the outer edges of an air chamber would come, or any other place that is soft.

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The idea of scraping heavily on the soft parts is for the purpose of causing the plate to press very hard on the soft parts, forcing the soft parts up to the bone so that when the plate comes up to a solid bearing on the soft parts, it will then just have an exactly even bearing on the hard parts, so that there will not be any rocking of the plate, and the suction will be very much improved. Wherever there are any rugae I would not scrape it away, but scrape between it and preserve its natural form. If anyone would like to see me trim a model, I will do so at the close of the paper.



FIG. 3.



FIG. 4.

Use of Tinfoil.

The tinfoil is then stretched over the model and worked down close and firm to fit accurately (Fig. 6). The base plate is then put upon it and well wired with iron wire, for the purpose of taking the articulation without springing the base plate (Figs. 6 and 7).

The one thing above all others which I want to put stress upon is the application of tinfoil. By applying the tinfoil upon the model after it has been properly scraped, as you will see in Fig. 6, my claim is that the plate will fit very much better than if it were made on the plaster model, from the fact that it is made on a smooth, glassy surface, and consequently the suction is much stronger. Another claim which I make is that the plate, being made between tin dies, as it were, is very much more dense, consequently more healthful for the mouth, inasmuch as it will not absorb the secretions of the mouth to nearly so great an extent as when made on plaster. And because the plate has a glossy-like surface next to the roof of the mouth, it will not irritate the mucous mem-

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brane and cause what is known as rubber sore mouth, as it will often do when made on plaster. In many, many cases of what has been known as rubber sore mouth, where the mouth has been almost like a piece of raw beefsteak, I have cured them with a plate made in this way.

Selection of Teeth.

After getting the articulation, the next point is the selection of teeth. Select teeth that will be appropriate in color, size and form for the individual.

I frequently procure the best I can from the dental depots—about a dozen, fifteen or twenty sets of the nearest I can get

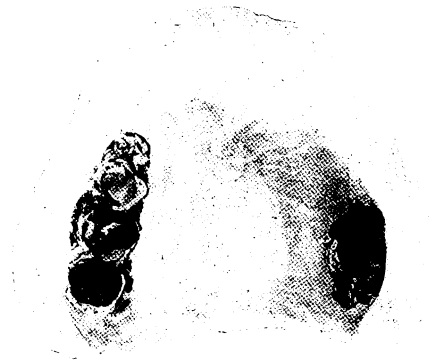


FIG. 5.

for the case. Then when the patient comes in I pick out what seems then to be the best of this lot; set up a set of them, and fit them in. After getting the length and proper fulness and contour, then try with the arrangement to give them what appears to be a natural appearance—many times using teeth from some of the other sets—perhaps one or two teeth from one set, one or two teeth from another set, and perhaps discarding the set entirely, and getting another; working over that case for perhaps hours at a time, with the object of securing the very best possible results.

The idea is to produce a set of teeth in that mouth which will seem as though they properly belonged to that face. I have worked in that way for a great many years. I have spent as much as nine hours in one particular case in working to procure certain effects.

You can not put too much time and trouble on a set of artificial teeth, whether you are properly paid for them or not. If you make them

at all they should be made as well and as natural as it is possible to make them. Make them with the idea of restoring what has been lost in that individual through the loss of the teeth. If the patient has lost the teeth from the effects of pyorrhea, irregularity, deformity, or any other cause, the new teeth should not be put in the mouth in a stiff, hard row, but should be made in such a way that they will have a slight suggestion of the way the natural teeth originally were in the mouth, even to the extent of suggesting slightly the trouble which caused the loss of the teeth, as is indicated in Fig. 8.

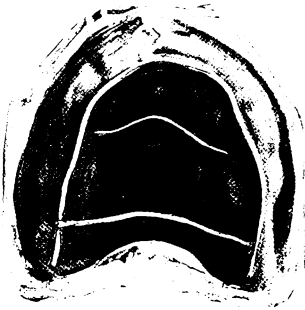


FIG. 6.

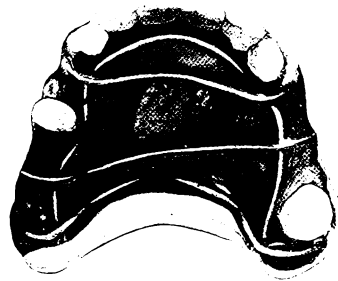


FIG. 7.

Preparing for Flasking.

When the teeth are set up and ready for the vulcanizer the base plate which has been used on the palatine surface, which has been stiffened with wires to prevent springing, should be entirely cut away and a new clean sheet of pink base plate wax, warmed in water and pressed firmly in place and sealed around the teeth, having simply a single thickness all over the surface, so that when the plate is finished it will be of an exact thickness over the entire palatine surface. Then the tinfoil should be placed upon the lingual surface, worked down on the base plate firmly, and when it is properly fitted, rubbed down, using the fingers, a cloth made into a little knot, and a burnisher, working it close to the teeth; then turn up the edges and nick them so that when put in the flask the plaster will run around those turned-up edges and hold the tin in place (Fig. 9). It is then placed in the plaster in such a way that the plaster in the lower half of the flask will hold in position the tin which is attached to the model; then the plaster in the upper half of the flask, when poured, will run around the teeth and the tinfoil on the lingual surface of the plate and hold it firmly so that when the flask is separated

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the tin on the model will remain in the lower half and the tin on the lingual surface of the plate will be on the upper half.

After the wax is scalded away, this tin on both sides of the flask should be thoroughly burnished so as to make a perfectly smooth, glassy surface, and the case packed, heated and pressed together and vulcanized.



FIG. 8.



FIG. 9.



FIG. 10.

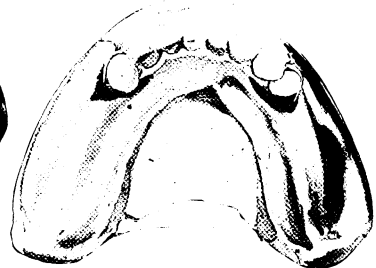


FIG. 11.

If done carefully it will come out of the vulcanizer with a perfectly polished surface on both sides of the plate, and the plate will be almost as dense as metal, as you will see in Fig. 10, which is a partial set of teeth, a practical case, finished without any filing or scraping; simply the edges trimmed and the gum finished down and then polished with a buff wheel and chalk on the lathe.

Lower or Partial Sets.

In making a lower set, or a lower partial set, I would not scrape the model at all before applying the tinfoil. I would simply use a fairly stiff brush and give the plaster model a brushing and then apply the tinfoil as described with the upper model and shown in Fig. 11.

PROSTHODONTIA

In making a partial plate, where clasps are to be used, they should be adjusted in such a way that they will not impinge upon the teeth nor the gum nor go straight around the teeth, but should be so adjusted that they will run from the direction of the gum toward the grinding surface of the teeth, with the idea of holding the plate in place rather than pressing it out of place, and adjusted so nicely that they will not bind in any way nor be felt by the patient at all, as though it was intended to hold the plate in place, but rather simply for the purpose of steadying it or catching it in case it should lose its bed (Fig. 11).

My whole idea in giving this demonstration is to show what can be

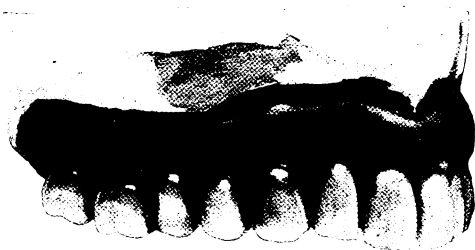


FIG. 12.

done if we go about it honestly and fairly, with the idea of doing the best we can for our patients, regardless of the fee—not depreciating money at all, but we should be proud enough of our own work and of our own efforts and our own ability to demand a price sufficient to pay us a fair compensation for the results which we obtain, and our patients will respect us and think much more of us than if we simply gave them a slop piece of work and charged them a measly price for it.

I well know that it is the custom very largely among dentists who are in general practice, to take an impression and the articulation, pick out a color and the size, send them away to Dr. Jones, a laboratory dentist, with instructions: "Make up a set of teeth size No. 16, color 23; have them in my office to-morrow at 11 o'clock." Dr. Jones not knowing whether the patient is black or white, tall or short, thick or thin, he makes up a set of teeth. At "11 o'clock to-morrow" the dentist puts a set of teeth in the mouth of that patient. Imagine what the result must be. Gentlemen, you all know that is not overdrawn. I hope that none of you who are here present this evening are in the habit of doing work in that way.

I have been carrying on a method similar to what I have described to you this evening for a great many years. I think I am safe in saying that I have not made a rubber plate without using No. 60 tinfoil for over twenty years. The arrangement of the teeth has been a hobby of mine since I have been in dentistry. I think I was the first to ever make a set of plain teeth on rubber plate and hand them in at college as a graduating set, which I did in the Boston Dental College in 1875, and I have made very few sets of gum teeth from that day to this. I will show you a plate which I made in 1880; a practical case where I extracted the teeth and copied the natural arrangement, so that all the irregularities

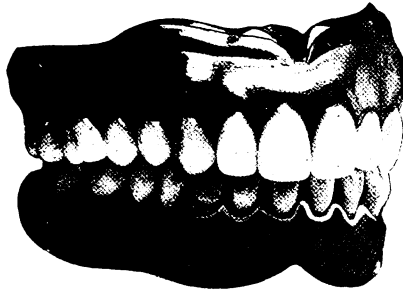


FIG. 13.

of the natural set appear, only not so much so as in nature, simply a suggestion. That was before I used tinfoil, but you will see my method of arrangement—looking for an artistic and natural appearance so similar to what I am working for to-day (Fig. 12). Fig. 13 was a fancy set made on black rubber and celluloid in 1882, simply to show what could be done.

It seems to me that among dentists, generally speaking, the method of making artificial dentures has reached a very low ebb, and my aim now is to see if we can not in some way incite an interest by the profession in that branch of our work and create a feeling whereby a greater interest will be taken—and men who are perfectly capable, if they would only take the time, could turn out magnificent artistic dentures, which would be a credit to them, and a credit to the profession. Teeth made in the haphazard way which I described a few minutes ago are disgraceful; a disgrace to the man who makes them; a disgrace to the dental profession at large, and should not be tolerated by reputable men. I would

like to see this Central Dental Association of Northern New Jersey take a stand and reclaim that branch of our profession which seems to be retrograding fast. People need to wear artificial dentures now as they always have, but there seems to be very few in the profession who will give them that time and attention which some of our old time fathers in the profession used to give. We should not be ashamed to devote our time and energies to this branch of our profession when we remember how much time was given and how much beautiful work was made by such men as John Allen and Norman W. Kingsley. That in itself should be our incentive.

Details to be Observed in Swaging Metal Plates.

By W. T. WALLACE, D.D.S., Henderson, N. C.

In the June number of *ITEMS OF INTEREST* I spoke about the proper way of swaging metal plates, yet to be able to swage a plate successfully there are a few details to be carefully observed in order to obtain the best results, *viz.*: Be sure to take the impression with the compound of plaster, pumice and whiting as described in my former article; take fine talcum powder and spread over the impression, then a wad of cotton and wipe the talcum into the fine pores of the impression, which will give a smooth surface. Place the impression directly over the center of the base block in such a manner that the model or die will be about one-half inch thick in the palate. Be very careful to build up around the edge of the impression on the tray with the pumice and plaster compound so that the metal will not run through and so that the model will fill out full at the heels. Heat the base block and impression to the same temperature as the fusing point of the die metal. Do not heat the die metal too hot, but just hot enough to pour, and pour carefully and quickly. Be sure the metal has cooled before separating from impression, to avoid fracture. After separating, carefully oil the die with glycerin and select a blank plate to conform fairly well to the model or die. See that it is annealed, then cover the die with a piece of soft muslin, take another piece of muslin and fold several times to spread over the plate, then take the horn mallet and tap over the folded muslin to conform the plate to the die; anneal carefully and place in the press.

Be sure to place a sheet of rubber dam over the plate slightly larger than the plate to prevent the rubber counter die material from getting

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between the plate and die; place in the press and turn down only moderately hard; remove and if the plate is buckling tap it out with horn mallet, anneal and place in press. Now apply heavy pressure; remove and trim plate to size desired; try in the mouth and if the fit is right place on die and take line graver one-sixteenth inch wide and cut spurs for retaining rubber, anneal and place in press to see that the plate fits perfectly, then apply wax and get the bite; but before trying plate with wax in the mouth the palate of the plate must be cleaned with a saturate solution of caustic soda and rinsed in pure water. A groove should be cut across the die at back part of plate so the edge of the plate will press slightly into the soft tissues, but must not rest heavy on the hard plate. By using the muslin in conforming the plate to the die, the plate will not be bruised as by the old methods, but will retain the original polish.





Some Observations on the Temporo-Maxillary Articulation in Changing the Occlusion.

By DR. HENRY A. BAKER, Boston, Mass.

Read before the American Society of Orthodontists, Detroit, 1907.

When your committee wrote me, inviting me to prepare a paper for this meeting and choose the above subject, I suppose they fully realized that there is no one who knows what actually takes place in the temporo-maxillary articulation in changing the occlusion.

Therefore, if you expect me to tell you positively, I am afraid I shall have to disappoint you. Neither will I, on the other hand, tire you with a long-drawn-out paper, theorizing. But I shall, however, endeavor to make plain to you the great changes which can be accomplished in the way of moving the mandible. You are doubtless acquainted with the many views held on this subject and possibly have decided opinions of your own, some of which, I trust, will coincide with mine. Some authorities claim that there is no movement of the mandible, but the movement that takes place is confined to the teeth, while others assert that the condyle forces back the soft tissues of the glenoid cavity.

In my opinion, in nearly, if not in all, of the pronounced cases, mark you pronounced cases, of prognathism, of Class III, the mandible is not where nature placed it. In other words, a change in position has taken place. Through habit, a forward movement is brought about similar to that which we create in changing a case of distal occlusion, or

Class II. If the above is not true, it would seem impossible to force as marked a change as we are able to accomplish in these cases. I shall show you by the lantern slides a case where the lower jaw was carried back at least three-eighths of an inch.

Cases from Practice.

Fig. 1 illustrates a marked case of Class III, in a young woman about thirty years of age. My opinion is that protrusion was greatly increased by the extraction of the lower molars. The replacement of the mandible was accomplished in a satisfactory manner after six months'

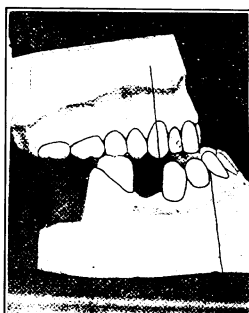


FIG. 1.

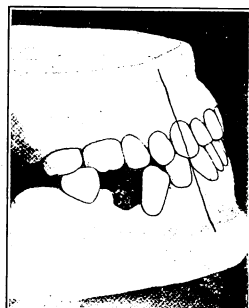


FIG. 2.

treatment. In order to have accurate data regarding the actual movement of the mandible, the indicator appliance illustrated in Fig. 3 was constructed. This appliance consists of a metal band spanning the forehead to which was attached a narrow nose piece of the same material, which carried two rigid wires bent in such a way that one rested upon the labial surface of the lower central incisor near the cutting edge, while the other touched upon the chin directly in front of the mental process. To make the adjustment accurate, soft modeling compound was placed under it and allowed to harden after the appliance was brought to its correct position, and firmly strapped in place, thus assuring an accurate replacement. Upon completion of the treatment the indicator was again applied and to my utter satisfaction proved the actual movement of the mandible. The reader will readily observe the marked distal movement of the mandible at the chin; but I wish to call particular attention to the movements accomplished in the incisal region.

In order that you may fully comprehend these movements, I call your attention to Fig. 2 and ask you to compare the relative inclination of the incisors in this figure to that of Fig. 1. It will be readily seen that in Fig. 2 the incisors are in a more erect position than before treat-

ment, and yet reference to Fig. 3 shows that they are distal to their former positions by at least one-eighth of an inch. Thus we are satisfied that while the mandible was forced distally three-eighths of an inch, the incisors were erected one-eighth of an inch.

It would seem to me that if the condyle was in its normal position, by carrying it back three-eighths of an inch it would bring great pressure on the walls of the auditory canal and affect the nerves of the internal ear and possibly the hearing.



FIG. 3.

If I remember correctly, I mentioned this habit theory to this society in New York. Mark you, gentlemen, habit is a very strong factor and I may say that the further I look into this subject the more firmly convinced am I of its truth, and I hope to prove it to your satisfaction by my lantern slides.

Fig. 4 is introduced to show what habit will sometimes accomplish. The habit was doubtless caused by the extraction of the lower molars. Reference need only be made to Fig. 5, which shows the young man some years earlier in life to illustrate the unhappy facial results. These habits often occur in very young children where no extraction has occurred.

Fig. 6 shows a case of this kind where the child evidently had two

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well defined bites. These two cases are simply representative of their kind and many such have come under my observation.

There are conditions in connection with this subject which seem hard to account for. For instance, in carrying the mandible forward in cases of distal occlusion, or Class II, we have all probably had considerable experience, and no doubt many of you have noticed that by holding it in its forward position a considerable length of time that it is impossible for the patient to bring it back to its original occlusion, and on some occasions when released the mandible will take its forward position unaided.

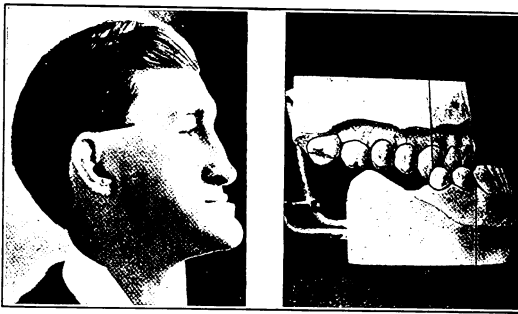


FIG. 4.



FIG. 5.

Now it would seem that after advancing a claim of this nature we should be careful to make this distinction, that we are speaking of those cases where, through habit or other causes, the temporo-maxillary articulation has been interfered with and the condyle has assumed a position anterior to that intended by nature; here we must of necessity produce a movement sufficient to place the condyle again in its natural position. In such cases, we may be reasonably sure that the movement has taken place after the application of adequate pressure; but on the other hand, in the treatment of those cases of Class III where there is no evidence of change in the temporo-maxillary articulation, but which are due more to the lack of development of the maxillary bones or the over-development of the body of the mandible, it would be unreasonable, or even impossible, to effect a change without seriously interfering with the auditory canal. It is, therefore, essential that this difference between these classes must be clearly defined, and in making our claim that the change takes place in the temporo-maxillary articulation, we must make it plain that we mean those cases where an anterior movement has already taken place. It will be noted that a large percentage of these cases are due to the

extraction of quite a number of teeth, especially the lower molars, and a reaching habit of the mandible takes place in the effort to acquire more adequate occlusion.

There may be serious doubt in some minds, even in these cases, that a forward movement takes place, or that it may be replaced; but in support of this claim I wish to introduce a quotation.

Some years ago, when I was correcting my first case of prognathism, and I would say it was about this time I discovered the habit theory, my

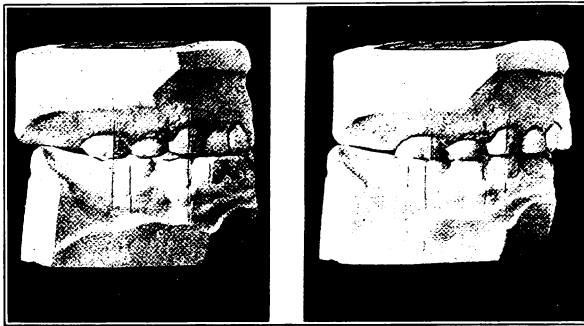


FIG. 6.

son, Dr. Lawrence Baker, became very much interested and speculated quite a good deal as to what did take place. Soon after this case he had occasion to visit Dr. Cryer and he speaks of it as follows: "A most interesting morning spent with Dr. Cryer in his museum. He was decided in his opinion that there was a migration of both joints. . . . In some specimens, the old articulation was completely obliterated. In others, the path of the condyle could be definitely traced."

Reasonable doubt is thus set aside and we are confident that in applying pressure to the mandible in such cases, we cause a reabsorption of the tissues which nature has deposited behind the misplaced condyle.

Discussion of Papers of Drs. Baker and Ottolengui.

I must first compliment Dr. Baker upon his excellent paper, although we all wish, I am sure, that he had written a longer one.

He begins with the statement that we will perhaps be disappointed in his not giving us a positive answer as to just what takes place in the distal movement of the mandible. His slides, however, in the first few

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pictures thrown upon the screen, and the apparatus employed to make measurements, prove pretty conclusively that there was a distal movement of the mandible—and a considerable one—in this particular case. Just how this movement occurred is still a matter of conjecture. I believe, with Dr. Baker, that in certain cases there is a displacement of the mandible, or a slight dislocation of the joint: that from long-continued use of the jaws in their abnormal relation there is a filling in of the joint just posterior to the condyle with thickened ligaments.

This theory that Dr. Baker has brought out explains very well why it is that we get such rapid adjustment of the parts in certain pronounced cases of Class III. If you will remember, Dr. Dunn presented a paper on this subject at our Chicago meeting. When the intermaxillary force was applied there was a rapid distal movement of the mandible; that can only be explained by admitting that it returned to its normal articulation.

In this kind of a case there is not so much movement in the teeth as in the mandible. In other cases of Class III, however, the joint may be perfectly normal. When this is true, the movement is confined to the teeth alone, in my opinion. Most of the change in the profile is accomplished by the mesial movement of the upper teeth. It is rather difficult to determine just where the movement does take place.

Dr. Baker has shown very nicely the part habit may play in commencing some forms of malocclusion that might afterward develop into permanent types.

I have enjoyed the papers of Dr. Baker and Dr. **Dr. Casto.** Ottolengui very much. Dr. Ottolengui said to me in New York last December that he would present the best paper at this meeting he had ever presented before the American Society. In a subsequent letter he reiterated that statement. He has done so. We might well request Dr. Ottolengui to continue his investigations along the same line and report them to the society.

Dr. Ottolengui's position regarding the cases of malocclusion coming under Class II, Division I (Angle classification), substantiates, in this particular class, Dr. Angle's claim relative to the constancy of the upper first molars. Dr. Ottolengui believes the mandible is always at fault in such cases, and says that he has never seen the protrusion or mesial position of the upper jaw.

Regarding what Dr. Ottolengui has to say about the normal size of the mandible in Class III cases of malocclusion (Angle classification) I think further investigation will have to be made before we can accept his conclusions as final. There is no doubt in my mind that some change in the temporo-maxillary articulation does occur in some cases

of Class III. If some skulls could be found where Class III cases of malocclusion of the teeth had existed, the mandible could be placed in its normal position in the Glenoid fossæ, which would probably enable us to determine whether or not the mandible was in its proper developmental relation to the other bones of the head and face.

In many cases of Class III there is no question but that the mandible is protruded in its relation to the balance of the face. Whether in such cases it is an over-development of the mandible, or whether the mandible has become fixed in a forward position in the temporo-maxillary articulation, is a question yet to be settled.

Dr. Ottolengui spoke of Dr. Angle's views regarding the classification and treatment of Class II cases. It is my understanding that the classification as given by Dr. Angle is applicable to the models only, and is applied irrespective of treatment. That is to say, the classification of a given case is to be made strictly in accordance with the occlusion of the teeth as observed by the use of the models, and has no relation to a stereotyped form of treatment for the correction of facial defects or for the establishment of harmony between the dental arches and facial lines. The treatment is to be determined subsequent to the classification.

On one occasion I talked to Dr. Angle regarding the forward movement of the upper molars and bicuspid, where the temporary cuspids had been prematurely lost. He classified such cases, from the models alone, as Class II cases. He said that in the treatment it would have to be determined whether the upper molars and bicuspid should be moved distally or whether the mandible should be moved mesially, by the requirements necessary to establish the best facial harmony. That has always been my understanding, and that is the method I have always followed.

I wish to say one word regarding the change
Dr. M. C. Watson. that may take place in the temporo-maxillary articulation. I have a case of a young child where I used the chin cap exclusively in a case of Class III; an interesting feature being that after some weeks of treatment, during which time considerable change had taken place, the child jumped out of bed one night and ran to her mother, saying: "O mother, my jaw just went back"—and it had gone back suddenly.

It has been a source of satisfaction to me to
Dr. Varney Barnes. listen to the remarks of Drs. Ottolengui and Watson. Were it not for the easy-flowing language, I might have thought my own ideas of the past two years were being expressed. I have published many of those ideas, and think they have been misunderstood. I believe emphatically that malnutrition is a

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big factor. We do have many causes contributing, but I believe the malnutrition may be both post-natal and pre-natal. If post-natal it is different from pre-natal. If pre-natal the indications that may later on show themselves in malocclusions will be shown at birth in the child. Proceeding on this theory I have sought the opportunity of seeing children very shortly after birth, before they begin to flesh up. A child fat at birth is abnormal; bone development is not there, but soft tissue development is there.

If the malnutrition is pre-natal, may it not, instead of acting alike on the maxilla and the mandible, produce a different effect on account of the difference in time of development of the two jaws? That is possible; hence there may arise a lack of development of the mandible. I put this before you because I want you to investigate it as I have done. There are five or six cases that I have examined in this way. I diagnosed three of them at birth, and my diagnosis has been corroborated, and I hope later to show them before this society. I have the records.

Suppose the malnutrition is post-natal. Then you may have it aggravated by non-use, habits, growths of adenoids and such things. I am on record over a year ago in saying I did not believe adenoids were responsible for as much as they have been credited with. I believe they are harmful in that they cause the perverted use of certain organs we should use normally. This may come from climatic conditions, or from too small air passages. In distal occlusion cases sometimes there are no real adenoid conditions. I have watched this matter in conjunction with rhinologists. They came to the same conclusion I have.

The remarks of Dr. Baker regarding the throwing forward of the mandible seem to be well taken. My own little girl has an apparent underdevelopment of both upper and lower jaws. She has the peculiar habit, when you say anything to her which she does not quite believe, of throwing the lower jaw forward with a peculiar expression. In that connection I believe we have the solution of those cases in this way, that the maxilla is underdeveloped; the temporo-maxillary articulation is too narrow, and, as corroborating Dr. Hoff's suspicion that the lower jaw has a better chance of development than the upper, I will say that I believe it.

I wish to report the case of a child nine years old. There is a deformity of the head affecting the external ear, producing deficient hearing; maxilla is undeveloped, as are also the rami and body of the mandible. She is the daughter of a physician, with history of pre-natal accident to the mother. The child is very bright, with well developed figure. I used apparatus of the Ainsworth type. I expanded the maxilla, thinking I might get luxation of the lower jaw. I ordered the child to

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chew gum. In expanding the maxilla the suture was opened until the central incisors were separated a quarter inch. After five months' treatment she can bring the lower jaw forward one-fourth of an inch. Hearing is improved markedly. She can hear the rustling of the leaves of the trees, a thing impossible before she came under my care. I leave this with you for thought.

I have in my possession models of a four-year-old which illustrate Dr. Baker's views on habit. She is the daughter of a dentist in Toledo. She had the habit of continually biting in one direction, and he brought her to me for treatment. I expanded the lower arch, because you will see the lower on the right side is in lingual occlusion to the upper. It is interesting as an example of biting over and getting the teeth into a condition of malocclusion through habit. (Models exhibited.)

I think Dr. Baker has presented here one of the very important problems that remain for someone to decide positively. While we have much evidence of belief, and of cases where things seem to be, we have very little or no absolute proof as to what takes place in the temporo-maxillary articulation. Positive knowledge of what is possible will have a great bearing on treatment and on retention.

In treating young patients, and in the critical examination of the arches, I have noticed how marked it is that the upper jaw is always and universally narrow. The lower jaw, in my observation, is far more universally well developed. In treating those cases from six to seven years of age, it has rather been the exception when any intermaxillary force is needed. The simple widening of the upper jaw and harmonizing of the two arches is often all that is necessary.

I have two cases in mind, of the developing third class, where I thought I would have to use intermaxillary force; but the harmonizing of the arches was all that was necessary. The same has been true with many developing Class II cases. It has been rather rare, unless the case were thoroughly established and more than ten years of age, where the jaws would not naturally find their normal position without any intermaxillary force.

I think that what Dr. Hoff has said is true as to the normal development of the mandible. The malnutrition is shown more in the upper jaw, and the influence of pathological conditions of the nasal passages are acting on the upper jaw rather than the lower. When the upper fails to develop, the lower jaw seeks its most comfortable occlusion, which is generally distal and not so often mesial; because in a narrowed upper jaw, with the lower normal, it must seek distal occlusion to become

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comfortable. The fact that this is true, and that we have cases cited by Drs. Watson, Dunn and others where the course of treatment seems to indicate that the mandible was in an abnormal forward position and suddenly went back, causes me to believe there is a change produced irrespective of the position of the teeth. There is an opportunity here for some thorough, scientific work, to determine the actual changes. That which takes place in the other joints of the body is in harmony with this hypothesis. The hip joint can be changed, as in congenital dislocation of the hip. The natural socket is filled with a new tissue. The reformation of the joint is required to be done by the orthopedic surgeon.

I will only say I am very glad I came. There have been papers presented before the society at this meeting any one of which would more than compensate a man for the time spent in making the trip to Detroit.

Dr. Kemple. We are all appreciative of everything Dr. Angle has done, but it does not seem to me we are obliged to follow him into error, if we think he is in error. The academic fact that the upper first molar is normal in its mesio-distal relation with the skull in ninety per cent. of all cases is not the point that Dr. Angle has attempted to make. We are ready to admit that. But when you take from the whole number of people those suffering with malocclusion, that is another question. The percentages would be quite different where the teeth are in normal occlusion or in malocclusion.

Let us admit for a moment that the upper first molar is fairly constant in its position in Class I and in Class II: that would probably establish your seventy per cent. of cases. We still have Class III, and Dr. Angle tells us it is correct there also, and there is where we can not follow him.

Dr. Baker. I do not see that there is much left for me to say. You agree with me too well. There is one point: I have given you a nucleus; I would like you to watch especially the children. The more I investigate this matter the more I believe these protruding mandibles come, in large percentage, from habit. In cases of extraction in the molar region the condition is brought about later in life, but I think in the majority of cases the habit comes on in childhood. I trust we may learn something still more definite some day.

SOCIETY PAPERS



Modern Technique of Apicoectomy: A Radical Operation.

By ROBERT T. OLIVER, D.D.S.

Examining and Supervising Dental Surgeon, U. S. Army.

*Read before the Central Dental Association of Northern New Jersey,
May, 1908.*

My subject for this evening is presented with a view of elaborating the operative technique of this simple intra-oral procedure, and to stimulate greater consideration for the utilization of modern surgical methods in all operations of this class.

The term "apicoectomy" is derived from two words; "apico," from the word "apical," pertaining to the apex of a root, and the Greek termination "ectomy," meaning excision, a cutting out; taken together it means literally the exsection of the apex of a root, *in situ*.

Chronic dento-alveolar abscess, from whatever cause, with or without fistulous tract, in which septic infection has escaped through the apical foramen and pyogenic bacteria have invaded the delicate tissues of the apical pericementum; with involvement of alveolus by erosive action of pus, any of its various complications, or the more serious sequelæ, are the lesions that usually indicate this operation.

Unnecessary delay in affording relief for these conditions may lead to disastrous results, remedial only after prolonged suffering and systemic debility by wholesale extraction or greater and more destructive operations.

Continued neglect may eventuate in such serious sequelæ as infection of adjacent lymphatic glands, terminating in septicemia (Burchard); a diffusion of streptococci into soft tissues threatening pyemia (Kirk); or the absorption of tubercle bacilli by the lymphatic system, resulting in tubercular degeneration of cervical glands (Cook).

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It is usual in chronic dento-alveolar abscess for **Morbid Anatomy.** the apex, wholly denuded of pericementum, to protrude into a sinus of varying dimensions, produced in the surrounding alveolus by pyogenic erosion, with the whole area circumscribed by a dense, tough, highly vascular mass of fibrous tissue. This sinus is filled with pus, broken down gangrenous tissue, particles of necrotic alveolus and multitudes of bacteria, the presence of which produces various local and systemic disturbances characterized by unmistakable symptoms.

When the general system is in good condition, *i. e.*, well nourished with compensating metabolism and normal caloricity, the above-mentioned circumscribed tissue seems to act as a dam to the further inroads of pus or bacterial invasion, but should the systemic balance be overthrown by exposure, disturbed assimilation, or other cause, the effect is readily apparent by increased activity of the abscess; the circumscribed tissue is overrun, and there is a greater loss of tissue, both osseous and soft, that frequently results in necrosis of the adjacent process from denudation and consequent loss of vitality, or by caries, through progressive molecular destruction.

Remembering that these simple intra-oral **Preparation.** operations are surgical in nature, they should be considered from the highest standpoint of the requirements of modern antiseptic surgery in preventing pyogenic or pathogenic infection; hence strict attention must be paid to procuring and maintaining, as nearly as possible, surgical cleanliness of the mouth, surgical asepsis of the field of operation, and the latest approved methods for sterilization of instruments, sponges, sutures, ligatures and operator's hands.

In all cases where time will permit, the patient's teeth should be thoroughly scaled of salivary deposits, and their surfaces polished.

If this can be accomplished the day before operation, so much the better, but if impracticable it can be done immediately prior to the operation, using extreme care not to lacerate any of the tissues.

As an additional precaution, the teeth should be thoroughly scrubbed with sterilized brush and an antiseptic abrasive, and rinsed with seventy-five per cent. ethylic alcohol solution.

For descriptive purposes of a typical case, we will assume it to be one of chronic dento-alveolar abscess of an upper incisor, from putrescent pulp, with fistulous opening on gum, approximately over the apex, and with open root-canal.

The dressing is removed from canal, and by the use of bristles and graduated Gates-Glidden drills, it is thoroughly cleansed, dried and filled

to the end with chloro-percha and gutta-percha points, being sure to force plenty of material through the apical foramen.

The crown cavity is then thoroughly sealed with gutta-percha or oxyphosphates, and a silver-wire ligature (No. 26 gauge) thrown around the tooth at cervical margin, firmly fixing it to the adjacent teeth by a figure of eight ligature.

All instruments used during this step are removed and the hands and mouth sterilized as before.

The buccal cavities of each cheek are now tamponed with sterile gauze rolls, and the mouth napkined with square piece of sterile gauze from over the chin, exposing only the three teeth and outer field of operation.

Everything being in readiness, the operator's left forefinger is firmly placed as high up under the lip as possible, immediately above the field, thereby accomplishing two very important essentials, *to wit*: raising the lip for free view with greater accessibility, and compression of the blood supply.

With a sharp, short-bladed, deep-bellied scalpel, a crescentic incision three-eighths of an inch long, with convexity downward, is made through gum and periosteum down to the process. This gives a crescentic flap with its free margin below, which, when raised from the bone, allows it to be slipped under and retained by the left forefinger, still maintaining a constriction of the blood supply, and also, of greater importance, gives the pedicle at the top, from which source the arteries enter, a factor of great import to the vitality of the flap during the subsequent reconstructive period.

The flap being carefully raised from surface of process by periosteal elevators, exposing the middle field, small, tightly wound gauze sponges are dipped in a very hot antiseptic solution, and packed into wound to control the seeping venous hemorrhage.

At this stage, after two or three tightly packed hot sponges, the operator may shift fingers of left hand to avoid cramping, and to prepare for the necessary long pressure to follow.

The middle field, now being comparatively free of blood, the irregular, jagged, fistulous opening in the process is observed; this, if fairly large, and approximately over the apex, is enlarged by bur or chisel to uncover apex, and lateral margin of sinus, exposing inner field.

If this opening is not conveniently situated, the large size engine trephine (four millimeters in diameter), is directed over position of apex, and a circular hole cut direct to root. This is enlarged laterally, sufficient to give a general view of inner field, and to facilitate accessibility.

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If the hemorrhage can be sufficiently controlled, the protruding apex, denuded of pericementum, will be observed, sometimes granular from concretions or pits, but more often smooth and eroded; also denuded projections of process, necrotic or carious, are seen or felt, and almost invariably a thick mat of fibrous tissue, partially filling and always bounding the sinus.

A small, sharp, cross-cut fissure bur (No. 557, S. S. W.), is now introduced immediately back of the line of denudation, to the mesial or distal surface, as convenient, and by revolving it at a medium speed, with constant pressure, and a slow up and down motion, the root is excised in as near a straight line as possible. A number of these burs should be prepared and changed by the assistant as often as one becomes clogged.

The field should be kept free, from time to time, of all dental, osseous and soft tissue debris, by hot antiseptic irrigation, which also controls venous seepage by contracting ends of severed vessels.

The apical end is removed from cavity, and all denuded or roughened margins of process chiseled out, giving a deep concave, bowl-shaped contour to the cavity.

A Volkman spoon, curette, or large round surgical bur (four millimeters in diameter), is now used to scrape out all the contents and smooth all margins down to healthy living tissue, using the smaller size spoons and burs to follow out possible pus ramifications.

The sinus, when clear, should be thoroughly mopped out with a strong antiseptic solution, followed by normal salt solution, and the flap, with periosteum intact, carefully stretched back into position, and held in place, ordinarily, by two or three interrupted, sterilized silk sutures.

Should the abscess have involved a large area of process between the roots of two or more teeth, it often becomes necessary to make a large flap, in which case it is advisable to control arterial hemorrhage by torsion made with hemostatic forceps, and to pack the large cavity with sterile gauze, afterward closing the wound by sutures at each end, leaving an opening at middle of lower border for protrusion of an end of the gauze packing for drainage. The packing is changed each day, diminishing its size to meet the decreasing diameter of cavity by the advance of granulation tissue. As a general rule, however, the cavity left from the ordinary case of excising the apex of one root, is completely closed without drainage, the flap usually uniting by first intention.

The interior of sinus eventually fills with blood, and in the absence of infection tissue regeneration ensues more or less rapidly through processes of granulation, followed by ossific deposits to an extent governed by the age of patient, and the condition of his general health.

The tampons and napkins are removed and replaced during the

operation as they become soiled; their final removal takes place after the slight seepage from line of incision has stopped, and after the surgical wound and inside of upper lip have been bathed with an antiseptic solution. The lip is then brought down firmly over the wound and held in position, while a strip of rubber adhesive, one and one-half inches wide, cut to fit under and around alæ of nose, is strapped over lip and across cheeks from ear to ear. This precaution is taken to prevent mobility of lip, and consequent irritation of wound.

Subsequent Treatment. Subsequent treatment consists of having the patient use a hot antiseptic mouth wash once every hour, while awake, during the succeeding twenty-four, without attempt to get it in contact with wound.

The upper lip must be kept immobile, rest and quiet being insisted on; and liquid diet prescribed every three hours, to be introduced per spoon well back in mouth to prevent possible contamination of wound.

Each day lip strap is carefully removed, lip raised, wound and inside of lip bathed antiseptically, and lip restrapped.

The sutures are usually removed about the fifth day, but lip straps not until about the seventh day. Soft diet may be prescribed from fifth to seventh day, and a return to regular diet thereafter.

The silver wire ligature is a precaution to hold tooth firm during manipulation of bur in process of excision, and for the support of weakened tooth during inflammatory condition of pericementum from operative traumatism, during a few days subsequent to operation. It is usually removed about the time lip strap is discarded.

The essential points of this method may be carried out in all single-rooted cases, and such modification of it made as required for the excision of one or more roots of other teeth.

In presenting this subject the writer does not lay claim to anything new, except, perhaps, the technique as outlined and the name given to the operative procedure. Various methods more or less crude and unscientific, from a modern surgical standpoint, have been advocated for the so-called amputation of tooth roots for many years.

While the present day heralds an advancement in dentistry through developments along the line of applied mechanics, it, unfortunately, has increased a tendency to confine our views to the restricted focus of a tooth, to the apparent disregard of other and equally important factors of health that demand our professional attention, hence the writer feels constrained, in closing, to enter a plea for the greater consideration of that vast outer field of our professional jurisdiction, the oral tissues, their diseases, and the modern development of surgical procedures and methods of treatment effecting their cure.



Care of Children's Teeth.

By Dr. S. G. WALTON, Cincinnati, Ohio.

Read before the Odontological Society of Cincinnati, April, 1908.

In presenting a paper before a society of professional men, who have had years of practice, I think we younger men have a hard lot. We feel most keenly our inability to properly interest those who have had infinitely more experience than we, but if I can inspire a thorough discussion of the subject, thereby benefiting largely the younger men, who have come into our midst, I shall consider that my presentation of the paper has not been in vain.

The first essential, it seems to me, in the care of children's teeth is to know how to handle the child, so that we may be able to render it the best service. Without the confidence of the little one, how can we expect to do effective work? The question then is how are we to gain that confidence and make the child feel that we are its friends and benefactors, rather than individuals to be feared. Personally I believe we can secure the child's warmest friendship if we but take the time to amuse and play with it for a little while, allowing it to examine the mirror and instruments, giving it a ride up and down in the chair, or such other amusements as we think will appeal to it. The time seemingly lost at this first acquaintance of the little child is more than compensated for at the subsequent visits, by its allowing us to proceed with the work uninterrupted. My experience has taught me that a child's first impressions are very lasting, and if we inspire the feeling of fear it will sink so deeply into the child's mind that we will be unable to eradicate the feeling. It sometimes surprises me to find how much pain a child will endure when it knows you are going to repair the affected tooth so it can eat candy and such other things that children crave, without suffering, as it has before.

Lancing for Erupting Teeth.

As we are sometimes called upon to assist in the eruption of temporary teeth, it is important that we be able to diagnose the case when the child is presented for examination and treatment. In case the outline of the tooth is seen beneath a swollen and tense gum, a simple incision with a sharp sterile lance in the anterior region, or, as is more often demanded, a crucial incision over a molar, will relieve the little sufferer, and result in the cessation of all symptoms of convulsions. Mothers sometimes rub the child's gum with a thimble, thus assisting

dentition. Dr. Otto Inglis tells of a case where the parents exhibited more rational thought than the physician in attendance. They were anxious to have the baby's gum lanced, but the doctor was afraid of cicatricial tissue forming over the wound, and the child died in convulsions. At this age, as the root is not complete, the edge is open, forming intimate relation with pulp tissue, and if pressure is brought to bear by resisting gum, the irritation may give rise to relatively the same degree of stimulus received in case of large exposure of pulp in an adult affected with caries.

The question arises, how soon should a child's teeth be cared for? Dr. Henry Bohn says, "As soon as children have teeth." The mother can begin the necessary care by cleansing the child's teeth with a cloth until it is old enough to imitate her with a soft brush and mild antiseptic mouth wash. After a child is two and a half or three years of age, its teeth should be examined by the family dentist at least twice a year, or oftener if necessary.

When we find cavities in the children's teeth, the question with us is, how shall they be treated, and what material used in filling them so that they will give the best service, performing their function properly? One says, never under any circumstances should a deciduous tooth be devitalized. Another says, devitalize and remove contents from pulp chamber and fill that portion with good antiseptic paste (he uses a mixture of zinc oxid, iodoform and oil of cloves). Abscessed deciduous teeth require most attention, and where it is advisable to fill the roots, they should be sterilized preferably with equal parts of trikresol and formalin, and filled with a material which is absorbed with the roots, for any other material offers a source of irritation for recurrence of the pathological condition.

We find it is almost impossible to dry the root canals thoroughly, so it becomes necessary to use a material that will adhere to moist surfaces. Dr. Henry Ferris, of Brooklyn, suggests a filling material which he finds meets the requirements for a good root canal filling material in temporary teeth. The formula he uses is: Isinglass, dr. i; tannic acid, gr. i ss.; trikresol, m. iv; aqua distilled, dr. i, gr. xxx. The mixture is heated to 100 degrees in a water bath. It becomes syrupy, and can be introduced into roots and covered with cement or gutta percha.

It is conceded by most of the profession who pay especial attention to children's teeth, that copper amalgam is the best all round filling material we have to-day for the temporary teeth. It is non-irritating and does not wear away like cement or gutta-percha, and possesses better preservative

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qualities against recurrence of caries. Some strongly favor the use of oxyphosphate of copper cement, on account of its being a non-conductor and antiseptic, and because it will adhere to damp walls.

The fact that temporary teeth are of less solid and firm texture than permanent ones should not be ignored, for the reason that decay proceeds more rapidly and consequently they should receive diligent attention.

We are often asked the question: "Why is it necessary to pay so much attention to temporary teeth when they are so soon lost?" This question requires an intelligent answer from the dentist, who is trying faithfully to perform his duty with the child's future health and happiness as his only incentive.

I think one of the most important reasons for properly preserving the temporary teeth, until they have done their duty, is to prevent malocclusion, which not only affects the ability to masticate and to enunciate correctly, but affects the comeliness of the face through life. Deciduous teeth assist in a mechanical way in developing the alveolar process and jaws proper, so should be retained until the permanent ones are ready to come through the gum. Under this head I think it would be well to consider the other causes of malocclusion as well. The first cause, as mentioned, is permanent loss of deciduous teeth. Second: Prolonged retention of deciduous teeth and roots. Third: Loss of permanent teeth, including first molars, by extraction. Fourth: Tardy eruption of permanent teeth. Fifth: Non-eruption of permanent teeth.

Any obstruction caused by retained temporary teeth or their roots, will easily direct the permanent tooth into a wrong position, and as the bone of the alveolar process is built up round the neck of the erupting tooth, in whatever situation it may assume, the completion of the root will perpetuate the irregularity, unless an opportunity is afforded for rectification. Dr. Ames advises the extraction of the single-rooted teeth on account of diverted roots, but grinds off crowns of deciduous molars so that the roots remain intact until forced out. As we know, the first permanent molar erupting between the maxillary tuberosity in the upper jaw and ascending ramus in the mandible, thus holds an important position, for it serves as a grinding surface while the incisors are developing and prevents their wearing away by attrition, which would otherwise result. As this is an important time in the body building period of life, intelligent watching is necessary to prevent permanent teeth being mistaken for temporary ones, by those who are unable to recognize the individual anatomical peculiarities.

The cuspid crypt is more deeply placed than the lateral and first bicuspid, so that the premature loss of the temporary cuspid allows the permanent tooth on either side to approach the other, with the result

that the aftercoming permanent cuspid assumes a position outside the dental arch. The divine plan for the eruption of temporary teeth at intervals in different portions of the mouth is a wise one, for, if the posterior teeth erupted at the same time as the anterior ones, the jaw is so formed at six months that the back teeth alone would occlude, leaving an open bite in front. In like manner they are replaced by the permanent ones, if proper attention has been paid the temporary teeth, in a way calculated to do the most efficient service.

We find a very plausible reason for properly caring for the temporary teeth, in the fact that many permanent teeth decay, due to caries being present in their predecessors, but of course the thing of most vital importance for us to consider in this relation is the proper care of them, to promote the general health and growth of the child.

Care of Teeth by Parents.

Parents should be educated to care for the child's teeth just as carefully as they are taught, by custom, to care for the surface of its body. As the mouth is the gateway to the stomach, this portal should receive the most careful attention to guard against hopeless disease, which is the ultimate result from carrying the germs continually into the system. They should be taught to instill into the child's mind the fact that unless the food is thoroughly masticated and saturated with saliva it is slowly digested and the stomach is called upon to bear a heavier burden than nature intends it should. Mothers do not know that they are doing their babies a positive injury often times by allowing them to be artificially fed by means of the rubber nipple, or indulging them in the use of the "dummy" or "baby comforter." These appliances cause a gap between the upper and lower incisors, consequently depriving these teeth of their usefulness.

Diet.

The subject of diet in relation to the teeth is an interesting one. Among the semi-barbarous or primitive tribes undeveloped jaws and teeth are the exception. Caries is infrequent and nearly normal occlusion is the rule. Their diet is of such a nature as to require vigorous chewing, while the masticatory apparatus of civilized man is simply suffering from disuse. The lack of development of the jaws, particularly in America, is observed almost as frequently in very young children as in adults. Malocclusion may occur as early as the second or third year. The result, if the growth of the jaw is not stimulated, inevitably is malocclusion of the permanent teeth and consequent derangement of the anatomy of the face.

Dr. Riser's experiments have taught that there is a distinct relationship between dental caries and the alkalinity of the saliva. A diet con-

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sisting of food stuffs, rich in calcium salts, increases the alkalinity and quantity of saliva, and he believes such a diet influences, in a marked degree, the quality of teeth. The use of a saturated solution of silver nitrate in the sulci of the molars will prevent, or at least retard, the action of decay, but the teeth should be examined from time to time and further treatment used if necessary.

When the tooth of a child is especially sensitive it is a good plan to remove some of the softened dentin, and place in the cavity a mixture of equal parts of Fletcher's dentin and silver-nitrate, the cavity being previously dried. At the next sitting the cavity can be easily excavated.

Children's Permanent Teeth.

As the permanent teeth of a child require nearly the same treatment as those of an adult, with a few exceptions, I shall not attempt to go into that phase of the subject, but will deal more particularly with the filling of the cavities in the crowns of permanent teeth in children's mouths.

Dr. Black says if he can secure proper conditions in the mouth and control the patient without jeopardizing his nervous condition, he prefers gold for a filling material, but deems it best to avoid the dread of operation, and if necessary, to do temporary work and set a definite time for the permanent work. Dr. Ottolengui holds about the same idea, feeling, though, that he can nearly always secure the child's confidence and place a better filling of gold than with any other filling materials.

Since the advent of the gold inlay it seems to me that when gold is indicated, usually it would be unwise to subject the child to protracted operations, with the rubber cloth in position. The gold inlay eliminates the malleting and other unpleasant features, and is certainly a boon to suffering humanity. Other filling materials, which possess the characteristics to make them acceptable otherwise, are a constant source of irritation owing to their susceptibility to thermal changes. The cement which retains the inlay in place also serves to protect the pulp. If gold has been proven to be the best material for the preservation of adult teeth, why does not the same hold true in the care of children's teeth?

Public School Examinations.

I do not wish to take up that side of the question that was so ably presented a few months ago by Dr. Phillips in regard to dental education in public schools, but feeling as I do, that the education of the public on this subject will be brought about through the schools, I can not refrain from giving a few statistics gathered by Dr. Gifford in the schools of St. Louis, as an example to show how much the people of this great country of ours are in need of dental education. He says:

The total enrollment of pupils in the public schools is	66,422
Number of pupils whose teeth need no attention....	2,656
Number of children with teeth to be filled.....	7,123
Number of teeth to be filled.....	99,931
Number of children with no tooth brush.....	22,141
Number of children using family tooth brush.....	1,998

In order to bring out a more complete discussion of this paper, from which we may all profit, I have formulated a few questions covering the points presented, but I trust many other interesting points on this important subject may be presented by the members of the society.

First.—I shall ask, how do you proceed to interest the child and gain its confidence?

Second.—What plan do you adopt in cases of difficult dentition, and what advice would you give the parent for the subsequent treatment?

Third.—What age would you suggest as being the best time to begin the care of children's teeth?

Fourth.—How do you treat temporary teeth when presented with exposed and aching pulps, and if you devitalize, with what material do you fill the roots?

Fifth.—How should we treat abscessed temporary teeth?

Sixth.—What materials are you accustomed to using in filling the crowns of temporary teeth?

Seventh.—Is it worth while for a dentist to spend his valuable time in the care of deciduous teeth at all; if so, why?

Eighth.—What plan would you suggest for the better education of the parents along dental lines?

Ninth.—With what material would you fill the permanent teeth of children?

Tenth.—What do you think of lectures in public schools by dentists?



Cast Gold Inlay.

By JOHN STEELE, D.D.S., Denver, Colo.

Read before the Colorado State Dental Association, June, 1908.

The subject assigned me is of great importance, and for the past year has been, without doubt, the absorbing topic wherever progressive dentistry is known. The idea of restoring decayed teeth by means of an inlay is by no means a new one, but is as old as the first crude attempts in the dental art.

The primitive methods of driving lead or fitting stone or other hard substances into a cavity were, of course, of a most imperfect nature, and in later days when better methods of replacing lost tooth tissue were discovered the inlay was almost abandoned. However, it was never quite forgotten, and in our own time we have seen inlays with pins projecting into the cavity cemented to place and doing good service.

The past few years have developed numerous methods of making the inlay, many of which were most efficient, except that they consumed so much time in their construction. However, the principles of cavity preparation were greatly advanced, and the results were so pleasing that many were led to adopt the inlay as one of their means of restoring decayed teeth. Among the inlay enthusiasts of two years ago there was no doubt that to a properly prepared cavity an inlay could be made that would give service second to no other known manner of filling. However, in most hands the time employed in their making was a great hindrance to their general use.

The time was ripe for Dr. Taggart's discovery, and by his process of reproducing a metal inlay from a wax model of the cavity by casting under pressure, he at once simplified our methods, shortened the time, made easy the construction and at the same time gave us more accurate results, so that to-day the inlay has easily a foremost place in dental art.

The inlay, then, is not of mushroom growth, but is the development of the matured thought of centuries. Many to-day are loud in its praises, while others of equal ability and skill look upon it as "an unclean thing," call it a fad, and prophesy a quick but sure demise.

To the former let me quote a few words of advice from Dr. C. N. Johnson: "The allurements of the cast method has a tendency to make extremists of men and to close their eyes to the proper indications for foil. This is often an injustice to the patient. The dentist

**Views of
Dr. C. N. Johnson.**

owes it to his patient to employ that method which is the most effective in the given case, and there are many of the cavities which come to us for filling which can be better and more advantageously preserved by foil than by an inlay."

To the latter this great foil enthusiast says: "The cast gold inlay has come like a benefaction upon the profession. It has robbed dentistry of much of its dread and at one sweep has changed drudgery into pleasure. More teeth will be saved than ever before, because they can be saved without so much discomfort, and with so little sacrifice of time to the patient."

And let all of us listen to the advice of this level-headed dentist when he says: "The cast inlay will act in conjunction with the foil filling, but will not displace it. Let us, therefore, be honest, broad-minded and discriminating and not a slave to any method."

In deciding by what means we shall replace lost tooth structure the thought which should be uppermost at all times is: "What will give the most permanent and artistic results?" Other points are very important but at the best they are only secondary and each dentist should reason for himself how best he can serve his patient. The questions of pain, nervous strain, time and expense all have to be considered carefully. The methods that are known and which have proven to be of great service should not be ruthlessly thrown aside for newer ones just because they are popular and easy. We must decide what in our hands will give the most efficient result for a certain case and then put our best efforts into the work.

To many the inlay has been a source of great satisfaction. Not in every case, however, for every one seems to have his troubles; but with persistent effort the technique becomes simpler and the results more certain as we get practice along these lines. If you are getting good results do not worry about taking longer time than for a gold filling, for you will gain speed with practice and ever simpler methods are sure to be developed of which you will be in a position to take advantage. By the use of the inlay many a tooth will be saved from the last resort in tooth restoration—that of crowning—and those which must be crowned will be done in a more thorough and hygienic manner by calling to our aid wherever possible our knowledge of casting.

In discussing Dr. Taggart's paper at the meeting of the Second District Dental Society of New York last January, Dr. Goslee made this statement: "It has revolutionized my own practice, because to-day I do not practice any phase of dentistry as I did a year ago."

Now if our methods are to be revolutionized or even changed in part it is well for us to commence right, and I sincerely believe that

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we should make our start in this new departure with the gold inlay, because the thoroughness of technique required and the difficulties to be overcome will put us in a better position to employ the casting process in other branches of our work.

Cavity Preparation.

Above all else, then, look well to your cavity preparation. Study the case carefully from the standpoint of stress and, with a picture in your mind of the form you wish to make the cavity, spare neither time nor pains in getting a satisfactory result. I feel that I can not emphasize this point too strongly, for if we believe that Dr. Taggart has opened for us a new epoch in our profession let us not degrade it by lack of thoroughness in our fundamental principles.

Before commencing the preparation of our cavity we should be careful not only to have sufficient separation, but also to have the gum septum pressed well away from the gingival margin.

In this paper let us consider the preparation of an approximo-occlusal cavity in a bicuspid or molar and then we can apply the same principles to any form of broken down tooth.

In preparing the cavity we extend the margins well beyond the contact with the adjoining tooth. This we do not only to avoid a recurrence of decay, but because it also permits a better finishing of the margins of the cavity and afterward of the line between the inlay and the tooth structure.

The cavity is carried well into the occlusal surface of the tooth. If there is not sufficient dentin in the base of the cavity to permit of a well defined horizontal step, restore it with cement, and any undercuts may also be filled in this way. If the tooth is broad we can cut the step correspondingly wider and of a depth, pulpally, sufficient to get a strong body of gold. When the tooth crown is long and narrow we can make our step deeper and narrower. The end of the step most remote from the approximal portion of the cavity is widened into a dove-tailed shape, or the step can in cases be deepened slightly at this point to lock the inlay and prevent dislodgment under stress of mastication. The walls should meet the floor at a definite angle and widen slightly toward the occlusal surface. The axial wall should be perpendicular and at right angles to the step. The gingival wall should be flat, of a fair breadth and at right angles to the axial wall. The buccal and lingual walls should meet the axial wall at a definite angle and should widen rather more than in the occlusal.

In forming the cavity use as much as possible small carborundum stones and disks, and large fissure and special inlay burs. Chisels bent

at the shank to the correct angle are very useful to give the cavity well defined angles.

The margins should be freely beveled and the edges of the inlay carried over them. One of the most serviceable features of gold inlays is that all thin or frail enamel walls may be dressed down and the inlay so built over them as to perfectly protect them.

The cavity preparation is completed by making the walls and margins perfectly smooth by means of disks and small Arkansas stones mounted on mandrels and used in the engine.

**Making the
Wax Inlay.**

Soften inlay wax in warm water and with the cavity wet with saliva press the soft wax into place with a flat end burnisher, small spatulas and your fingers. In some cases a matrix will assist greatly at this point. Then have the patient close on the wax in different ways as in masticating. Chill, remove and trim away the excess. Notice if the wax has reached the angles of your cavity, and if not when replaced in cavity soften slightly and press it to place. Test the occlusion again and press the margins to place. Now cool the wax with water from a syringe and with instruments slightly smeared with oil trim and burnish the wax until you get a perfect model with the edges only slightly overlapping. Chill again and carve while in place in the tooth or complete the carving when the model has been mounted on the sprue. After a final cooling remove the wax model with any suitable instrument. Then free the wax from the instrument and let it drop into a glass of cool water, where it will remain safely until you have leisure to continue the process.

**Impression
Method.**

Sometimes it is not convenient to make a wax model in the tooth or for other reasons you may desire to make your inlay from an impression and you can do it quite accurately. Make a tray of German silver or brass about twenty-eight gauge to approximately fit the surfaces of the cavity. With this, press compound into the cavity, cool thoroughly and remove to trim away the excess. Then replace in position in the tooth and warm with water from a syringe and press it firmly to place. Thoroughly chill the compound, remove and make a model of fine investment on which you can make your wax model, getting the occlusion simply by your own judgment or by placing on an articulator as desired.

Dr. Price, of Cleveland, in the May ITEMS OF INTEREST, makes a strong argument for working from impressions which is worthy of most careful study, the consideration of which would be a most interesting subject for a paper in itself.

The wax model should be handled with care, in which case there is

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not the slightest danger of contorting its shape. Place it upon the palm of your left hand, absorb the water with blotting paper, warm your sprue wire, and pierce a convex spot about the middle of the outer surface. It should now be firmly held on the sprue and is ready for investing.

Sift the fine investment into a little water, but
Investment. do not stir it. With a small brush paint all the surfaces of the wax with the thin investment, working it into the angles to make sure there is no air inclosed. Add thicker investment until you have a coating of at least one-sixteenth of an inch around the wax and more around the sprue; when hard place in position in the ring and fill with any investment thoroughly mixed, which will not shrink.

When the sprue and cap are removed you are ready to heat up the investment to burn out the wax, and in this and the amount of heat afterward to be applied you will have to be guided by what casting device you are going to use. I heat slowly at first to dry out the investment, and then turn on the full blast of the bunsen burner. When satisfied that all wax is burned away, I place in the casting machine and with at least a pennyweight more gold in place than I expect to use, proceed to melt the gold, paying no further attention to the heating of the investment; and when the gold liquifies and rises up into a clear, round, nervous globule I quickly, but with due deliberation, press down the top so that the asbestos pad makes a perfect air tight joint, turn on eight pounds of compressed air and pray that all is well; and on opening I am generally rewarded with a satisfactory inlay.

The inlay is now cleaned and boiled in sulphuric acid in a test tube, which removes any traces of the investment material or flux. The rough surface, if any, is smoothed with stones and disks and any excess of margins trimmed to a fine edge and then fitted to the cavity. If the contact is not sufficiently prominent, solder can be readily sweated as desired. The inner surface is roughened and cemented to a clean, dry cavity, using a rocking motion to force out any excess of cement as the inlay goes to place. The margins are thoroughly burnished while the cement is soft, and when it hardens the final polishing is given.

Almost every dentist has wished for an ideal cement which will be, above all other qualities, insoluble in the oral fluids, but I will go on record as stating that if the cavity has been properly prepared and the inlay perfectly made the cements now at our service will hold the tooth and gold in a perfect adhesion until doomsday.

However, should a cement some day be discovered that will unite permanently all the inlays which shall be made to the cavities of the teeth, then the question of whether the inlay has come to stay will be answered

in the negative, for we will facilitate matters to a great degree by at once restoring the tooth altogether with this ideal cement.

In conclusion let me advise any beginners not to become discouraged by failure, because we all have them, but they become fewer with time, and when something goes wrong do not lay all the fault to the outfit, whatever it may be, nor to the investment, wax or cements, but examine your own methods, for with the same material you will some day, if patient and persistent, accomplish most pleasing results.

Obstruction of the Nose Due to Dentigerous Cysts.

By FRANK ROBERT SPENCER, A.B., M.D., Boulder, Colo.
Instructor of Rhinology and Laryngology, University of Colorado.

*Read by invitation before the Colorado State Dental Society, Boulder, Colo.,
June, 1908.*

I trust you will pardon me for attempting to enlighten you upon a subject with which you are doubtless more familiar than the speaker; but such cases are of special interest to both dentists and rhinologists. When the floor of the nose is encroached upon patients are as apt to consult a rhinologist as a dentist, and the case is either medical or dental according to the region affected. The conditions arising are often not understood by physicians and difficulties in diagnosis may, therefore, arise.

Dr. I. J. Gallaher, of Denver, reported five cases before the Western Section of the Laryngological, Rhinological and Otological Society at Denver, February 16th, 1907 (see the *Laryngoscope*, St. Louis, August, 1907). The author in discussing Dr. Gallaher's cases briefly reported two from his own practice and I will report these fully in the course of this paper.

According to Dr. Gallaher's paper, tooth cysts may be divided into periosteal and follicular. Periosteal cysts consist of granulation tissue and epithelial cells and have their origin in the covering of the root. They are more frequent in the upper than in the lower teeth, although they are many times overlooked in the latter owing to the thickness of bony cortex limiting their growth. It has been Dr. Gallaher's experience that the lateral incisor and bicuspid are especially affected.

That form of cystic tumor associated with some aberration in development of the teeth and which prevents the normal process of their

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eruption is known as a dentigerous cyst. These are usually found in connection with the permanent teeth, occasionally with supernumerary, but very rarely with deciduous. The disease may occur in either jaw, but most frequently in the upper.

Malpositions and malformations are the most frequent abnormalities in the development of the teeth, and these conditions seem to be those which most often act as etiological factors in producing disease. The weight of authority shows that the teeth found in a dentigerous cyst are so malposed or malformed as to render it impossible for them to emerge from their crypts and assume a position in the dental arch.

Of all the abnormal teeth which remain impacted in the jaws only a very few give rise to dentigerous cysts, so that this condition is by no means a common one.

The tooth bearing or dentigerous cysts have been called "follicular odontomes" by Sutton. He describes them as follows: "Follicular odontomes arise commonly in connection with teeth of the permanent set, and especially with the molars. Sometimes these tumors attain large dimensions and produce great deformity. The tumor consists of a wall of varying thickness, which represents an expanded tooth follicle. In some cases it is thin and crepitant; in others it may be one centimeter thick. The cavity of the cyst usually contains viscid fluid, and a crown or root of an imperfectly developed tooth. Occasionally the tooth is loose in the follicle, sometimes inverted, and often its root is truncated; exceptionally the tooth is absent. The walls of the cyst always contain calcific or osseous matter; the amount varies considerably. Follicular odontomes rarely suppurate." However, suppuration is the rule with cases which afflict the nose.

Salter says, "When a tooth is impacted in the jaw, the fang is enclosed in a bony socket, lined by periosteum, as in ordinary circumstances, while the crown of the tooth is free in a little bony loculus lined with that which was the so-called 'enamel-pulp.' The structure is clothed with a sort of epithelium, which is apt to assume the function of secreting fluid."

Diagnosis and Symptoms.

In making the diagnosis the question of age is important, according to Marshall (see "Injuries and Surgical Diseases of the Face, Mouth and Jaws," by Marshall). The great majority of the cases are under thirty years, although it has occurred as late as the sixtieth year.

Most of the symptoms of a dentigerous cyst are local, and consist of expansion of the maxillary bone in some definite locality, with a corresponding deformity of the features, a sense of weight and tension, sometimes pain and general disturbance. Crepitation may be elicited by

palpation and at times even fluctuation is present if the bony wall has been destroyed.

If one or more of the permanent teeth has failed to appear in their proper place, this should arouse the suspicion of the examiner. In case all the permanent teeth are present a supernumerary may be responsible for the cyst. Temporary teeth rarely cause cyst formation. The asperating needle may be used to draw off serous fluid when present and the probe to search for tooth crowns after making an incision in the cyst wall for the latter. These cysts usually contain a straw colored fluid, rich in albumin and mucin, which forms a favorable medium for the growth of germs after infection.

Several methods of treatment may be resorted to as follows: First, opening and draining the cyst.

Treatment. This rarely accomplishes a cure, because the cause of the disease is not removed and a recurrence is the rule. Second, free incision of the cyst wall, evacuation of the contents; curettage of the cyst wall with the removal of the tooth crown if present; cauterization, followed by packing of the wound. Third, free incision and evacuation with dissection of the cyst lining from the bony wall and forcing of flaps from the margin of the wound, including the periosteum, into the cavity by means of gauze packing. Dr. Gallaher used the third method in treating his cases, while with the author the second was sufficient.

Dr. Gallaher's cases are as follows: Case I—

Dr. Gallaher's Cases. “Miss R., age twenty-five, presents herself with marked facial deformity. There is a swelling under-

Case I. neath the upper lip, on each side of the median line, so prominent that the nose is displaced forward. Upon examination, a cyst on each side is easily detected, at the junction of the alveolar and buccal mucous membrane. Examining the nose internally, a cyst is seen along its floor and underneath the anterior portion of the inferior turbinate body. This is a very plain case of double periosteal cyst connected with the right and left incisor.” This is the first case of double periosteal cyst that Dr. Gallaher had seen. Two incisions were made into the sac, one in the nose and one in the mouth, giving good drainage. This was followed by gentle packing, stimulated with a mild solution of iodine and washing. Both cysts were cured within five weeks. After the operation the cosmetic effect was very striking.

Case II. “Mrs. R., age thirty-five, presents herself with a swelling at the right of the median line, causing a displacement of the wing of the nose. It has been coming on for some months and has been painful during the last week. Intra-nasal examination shows a swelling on the floor of the nose extend-

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ing to the outer wall. By direct palpation in the nose and under the lip, a cyst is diagnosed. An incision under the lip liberated pus. Another incision was also made in the floor of the nose. The usual treatment was followed out, resulting in a prompt cure."

Case III. "Exactly like Case I, occurring in a woman, age forty. The sac contained pus and was unilateral."

The above are all illustrations of the ordinary periosteal cyst and the following two were follicular or dentigerous cysts.

Case IV. "Boy, age eleven, presents himself with a swelling in the upper left maxilla, which is firm and painful. Immediately above the sixth-year molar a dentigerous cyst was suspected, and he was operated upon a few days afterward. With a good labial retractor, the parts were well exposed and an incision made from the canine fossa posteriorly to the molar ridge. The membrane and the periosteum were carefully dissected loose, followed by two incisions at right angles to the original one, and the bony cortex removed. The cyst was then dissected out as thoroughly as possible, followed by curettage. The membrane, with its periosteum, was then pushed back into the cavity and held in position by means of a tampon. Suppuration followed, but after eight weeks of careful washing and stimulation the entire cavity closed. In this cyst an inverted tooth crown was found, probably a supernumerary bicuspid."

Case V. "Young woman, age twenty-two. A diffuse hard swelling is found over the second bicuspid. She reports that she was operated upon previously and the bone scraped. There is a large fistula opening into the antrum. This fistula has discharged for over a year. There has been no discharge of pus from the nose. An incision was made from the median line to the molar ridge. The membrane was then carefully dissected up. In this case it became necessary to remove the entire anterior wall of the antrum. The cyst wall was removed and the extensive removal of bone was made necessary by the existing osteitis. The walls of the antrum were also curetted. The subsequent treatment consisted of packing and washing the antrum. A drainage tube was soon introduced and the washing continued through it. Healing was complete in about seven weeks."

The author's cases are as follows: Case I—
Author's Cases. Miss A., age twenty-six, consulted me in the summer of 1905 concerning a swelling just to the right of the median line of the nose which pushed the upper lip forward at this point; was painful on pressure and extended

into the floor of the nose producing an elevation at this point. She stated that she had twice opened the swelling with a pin and that a free flow of pus followed this procedure.

A free incision was made in the lowest part of the tumor, underneath the upper lip, drained about 4 c.c. of thick pus. Probing failed to elicit dead bone.

About three months later this patient returned with practically the same condition. After another free incision a small piece of tooth was found in the sac and removed with a pair of forceps. The wall of the sac was curetted and cauterized with ninety-five per cent. phenol on a cotton wound applicator. The cyst was then packed with gauze and made to heal from the bottom. Each time the gauze was removed the sac was irrigated with an antiseptic solution. This time the healing was apparently complete, as there has not been any return of the trouble and the elevation of the floor of the nose has, of course, disappeared with the rest of the swelling.

As nearly as I was able to determine this cyst sprang from the right upper lateral incisor and it was because of the encroachment of the swelling upon the floor of the nose that the author was consulted.

Case II. Mr. B., age thirty-six, came to the Rhinological Clinic, University of Colorado, with a swelling extending into the floor of the left vestibule and forcing the left wing of the nose to one side. He complained of dull pain, especially upon pressure, over the affected area and some difficulty in breathing on this side. A free incision was made in the top of the cyst, by way of the vestibule, and the sac irrigated with hydrogen peroxid. The cyst was curetted and packed with fifty per cent. iodoform gauze until healing was complete. The cavity was repacked and irrigated with an antiseptic solution every third day. I was not able to find a remnant of a tooth in this sac. This cyst, like the preceding, probably developed from the upper lateral incisor.

While I have doubtless seen cases of this kind before, I certainly did not recognize their etiology until I heard Dr. Gallaher's paper. A discussion of the subject at this time may not enlighten you, but I hope it will serve through you to enable physicians to better diagnose and treat seemingly trivial conditions.

Manipulation of Porcelain for Porcelain Inlays.

By A. W. STARBUCK, D.D.S.,
*Superintendent of Infirmary, Colorado College of Dental Surgery,
Denver, Colo.*

Read before the Colorado State Dental Association, June, 1908.

In selecting the colors for an inlay the operator should always bear in mind the anatomy of a tooth, as it is only by following nature and her color scheme that we can obtain the delicate shadings so necessary for a perfect match.

**Selecting
the Colors.**

The first color to decide upon is that of the dentin. This color is obtained at the very neck of the tooth. At this point the enamel is the thinnest, therefore we have the better chance to get the color of the dentin. In normal teeth the dentin is *always yellow* or a *brownish yellow*. If we find the color ranges between two shades, the darker shade is preferable to the lighter.

The enamel of a tooth is *always blue*. This color should be obtained at the very tip of the tooth. These are the only colors necessary to select as the intermediate shades in a tooth are simply the combination of these two and are formed by the proper building of one color over the other. It is never necessary to mix colors, except possibly in a few cases where the teeth are peculiarly discolored.

The colors should always be selected while the tooth is moist, and it is preferable to have the patient sitting in a normal position.

The normal dentin colors in the leading makes of porcelain ranging from light to dark are as follows:

White's high fusing: T, R, P, I, H, J, K.

Brewster's high fusing: A, B, C, D, E, F, G, H.

Consolidated high fusing: B, C, D, I, J, K, L, M.

Whiteley's inlay porcelains: 3, 4, 5, 6, 7, 8, 23, 24.

Brewster's gold matrix: 1, 2, 3.

Jenkins' porcelain enamels: 22, 20, 17, 4, 7, 27, 12.

Brewster's low fusing: 1, 2, 3, 4.

The colors of the enamels are:

White's high fusing: C.

Brewster's high fusing: T, occasionally U.

Consolidated high fusing: S, H.

Whiteley's inlay: 13.

Brewster's gold matrix: 10.

Jenkins's porcelain enamels: 5, 25.

Brewster's low fusing: 11.

There is no rule in the selection of colors for discolored teeth. The discoloration is always in the dentin and may be a decided brown or a dark blue or a combination of the two.

In the high fusing porcelain it is advisable first to use a more opaque porcelain than the enamels, as their translucency is so great that the shadows of the mouth would tend to change the inlay.

Applying Colors:
High Fusing
Porcelain.

By first using what is commonly called foundation porcelain, this trouble is overcome to a large extent. We also find that several layers, each differing in color, is an assistance.

After removing the matrix from the cavity, grasp it in a pair of locking pliers at some point where there is an excess of platinum.

Take a small portion of the yellow foundation body and mix with just enough water to make a doughy mass, taking care to spatulate thoroughly. Take a small portion on the point of the carving instrument, place it in the bottom of the matrix, then, with the knurled portion of the instrument passed across the locked pliers, vibrate to place. The foundation body should be built out to the natural contour of the dentin. This porcelain should not extend to the margins at any point. Any excess of moisture may be removed with bits of blotting paper or by touching the damp porcelain to the dry. After it stands a few seconds remove the dry powder with a soft brush. All porcelains should be thoroughly vibrated, or settled to place, otherwise there will be a lack of density after baking. Dry thoroughly, then place in the furnace and bake to a low glaze. After this bake it is generally found advantageous to re-burnish.

Next we restore the dentin with the yellow or brownish-yellow enamel. Great care should be used in contouring this. It should be built well to the surface at the gingival portion, gradually receding as it approaches the incisal edge. As a rule it is necessary to make two bakings of this dentin color before applying the blue for the enamel. In no case should the porcelain be baked to a full glaze until the final bake.

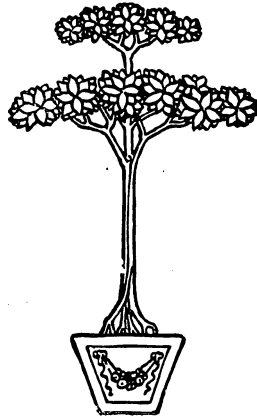
After each bake it is advisable to hold the inlay by the side of the tooth (not in the cavity) to test the color.

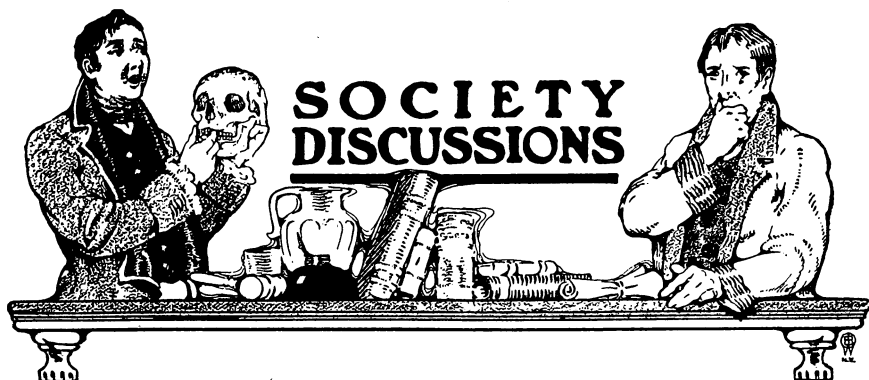
The enamel should never be built beyond the margin, thinking the shrinkage will make it "just right," invariably the inlay will be too full.

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Applying Low Fusing Porcelain.

It is not necessary to use foundation body with a low fusing porcelain as it is sufficiently opaque in itself. The manner of building up the colors is the same as in the high fusing with the exception that the dentin color should be brought much nearer to the surface. Otherwise the blue would entirely cut out the yellow on account of its opacity.





Central Dental Association of Northern New Jersey. May Meeting.

A regular monthly meeting of the Central Dental Association of Northern New Jersey was held at Davis's Parlors, Newark, N. J., Monday, May 18, 1908. President Hane called the meeting to order. A quorum being present the call of the roll was dispensed with.

On motion the regular business of the evening was dispensed with, except the reading of the minutes and the election of new members and the reception of applications.

The president then introduced Dr. S. C. G. Watkins, of Montclair, N. J., who read a paper entitled "A Plea for Higher Ideals in Prosthetic Dentistry."

Discussion of Dr. Watkins's Paper.

**Dr. Hutchinson,
Brooklyn, N. Y.**

It gives me a great deal of pleasure to be here this evening and to discuss this paper by Dr. Watkins for more than one reason. One is my friendship for Dr. Watkins, another the value of the paper; and a third, the fact that I served my time as a student with Dr. Watkins, twenty-one years ago, and so perhaps have had better opportunities than most of you to judge of what he does.

I should like to take advantage of this opportunity to say a few words in regard to Dr. Watkins and his work.

I consider myself particularly fortunate in having had an opportunity of serving with him before entering college. Dr. Watkins is a man who practices what he preaches. He has described to us very clearly this

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evening his method of work. Dr. Watkins not only knows what to do, but he does it, and he does what he has told us to do, and I can bear testimony to that fact, as I was with him in his operating room and laboratory during my whole service with him as a student.

I do not think there can be any question as to the value of the method he has described to us. The only thing, perhaps, that might be discussed is the possibility of not scraping the model properly in order to allow the thickness of tinfoil. It would be quite an easy matter for one who is not thorough and who has not a full comprehension of this method, to apply the tinfoil in such a way as to injure the cast and make the plate fit rather loosely, but that is overcome completely by the proper scraping of the cast, the object being, as the essayist has mentioned, not merely to make a perfect adaptation, but to scrape away the soft parts, bringing the pressure to bear upon those parts and relieving the hard parts by additional thicknesses of tinfoil so that when the plate is put in the mouth we only have to press it into place, and we get an equal bearing and an equal pressure everywhere.

The essayist mentioned the subject of rubber sore mouths. I have never been able to convince myself that a rubber sore mouth was due to mercurial irritation. I believe it is due to a roughened plate, a plate presenting a poor surface on which there will be a growth of bacteria irritating to the mucous membrane, and Dr. Watkins's method of coating with tinfoil entirely obviates that.

Many of us have been under the impression that a rubber sore mouth is due to the peculiar coloring of the rubber, and that the trouble could be obviated by the use of a gold plate. But such is not the case.

In Dr. Watkins's method the technique must be followed out carefully in order to get good results, and the arrangement of the teeth to imitate nature is a most excellent idea. It is absurd to put a set of fine new teeth in the mouth of an adult who through disease has lost the natural organs. The effect of imitating the natural organs in any mouth is far better than the placing of a new set in the mouth irrespective of former conditions, and, furthermore, by carving away some of the teeth and exposing the necks, as was done in some of the cases presented by the essayist, we achieve the artistic.

But I would like to commend the point that was made in regard to our spending all the time that is necessary to produce an artistic effect. We should not endeavor to put in a new set of teeth, but should aim to restore the lost organs in the most natural way possible, and that can not be done by taking the impression and turning that over to a mechanical man who never sees the patient and knows nothing of his personality, for the personal equation is most important. Furthermore,

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the mechanical man has no particular interest in making the work conform with the natural mouth; he is paid a certain fee and is turning out work as rapidly as he can.

There is no short cut to success, and if we would elevate the status of our profession and make it more than a mere trade, as it has justly grown to be regarded by many, we should give our time and do the work ourselves, and if a man has not the ability or is not willing to spend his time in doing perfect work, he should not undertake it at all, but should send his patient to someone who will. I believe the time is coming when a man in general practice who does not care to carry through the more important part of this particular branch of the work will refer his patients to other men who make a specialty of doing prosthetic work, and I would strongly advocate such a course of procedure, unless every man is willing to give this branch proper time and attention.

Dr. Watkins spoke of making teeth facsimiles of those which he had extracted. A lady living in Richmond, Va., visited me some years ago. In her natural teeth there were one or two little fillings, and she wanted a full upper set, a facsimile of those in the mouth, so that her husband and friends would not know she had artificial teeth.

Before extracting the teeth, I took an impression. Then I took my plaster model and marked the position and size of each of the fillings, and, after extracting the teeth, I carefully noted the contour and appearance and color, and selected teeth which were entirely similar in size and color to the natural dentures, and then I had gold fillings put in some of the artificial teeth exactly like those in the natural teeth. She was delighted with the result, and paid me a good fee, and I think that if we did more of that kind of work it would be more gratifying to our patients and ourselves. I am also a great believer in the tinfoil method shown by Dr. Watkins.

**Dr. H. Wild,
Montclair.**

It has been my pleasure to be associated with Dr. Watkins and to try the serviceability of his methods. I had a patient who had a plate made in the ordinary way by one of our Newark dentists, and a capable dentist too, but the plate was of no service, and I tried to make one, with the same unsatisfactory results. I called on Dr. Watkins, who demonstrated his method to me and I put it in practice. It was a case where the palate was exceedingly hard, with, of course, soft tissues beside the ridge, and a plate made in the ordinary way would naturally ride on the hard palate and would rock, and there would be no suction at all, so I conceived the scheme of cutting down the model over the soft places and

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running a vacuum back to the end of the plate, and the patient wears that plate to-day with complete satisfaction.

There was another point which I think was not mentioned; that is to get the teeth to stand out without rubber between them. Mix oxyphosphate of zinc and place it between the teeth before investing. It thus makes a hard substance to back the rubber against; then chip out the oxyphosphate when finishing the plate, which leaves the teeth standing apart more as they would in the natural mouth.

**Dr. J. P. Root,
Kansas City, Mo.**

Dr. Hutchinson made a statement that is wrong, and might bar a good many from using tinfoil. I think tinfoil is the only way there is to put the proper surface on the palatal side of a rubber plate. I do not know why it is not commonly used—and those of you who send your plates to a laboratory to be finished will find that they will not put the tinfoil on unless it is demanded, because it is much easier to do it in some other way.

The expression Dr. Hutchinson used about scraping away the model for any other purpose except to make room for the tinfoil is something I want to refer to. Dr. Watkins uses No. 60 tinfoil. I use No. 10 and there is a great difference between them, but I find that I can more thoroughly adapt the latter. I think the thickness is more than offset by the mucous membrane that is pushed away in taking the impression, so that as far as scraping any portion of that plate with the idea of making room for the tinfoil, I think that is entirely unnecessary. I think a great many of the younger men are barred from using tinfoil for that reason: the difficulty of judging how much to scrape.

Dr. Watkins spoke of his method of taking an impression with wax. I do not use all wax. I use the modeling compound. I think the old-fashioned way of taking an impression, whether it be for a partial or a full denture, in plaster and plaster alone, is wrong.

I never do it, and have not for a great many years. I take my impression in modeling compound. I take it away from the mouth before it is thoroughly set, to avoid cutting away too much of it and to save myself time; with my fingers I push away certain portions of it, but not from the roof of the mouth; then with a sharp knife, if I have one, or a warm one, I cut away certain portions of the modeling compound and then take my impression in plaster of Paris. I have only a slight film of plaster of Paris. I make an exact cast into that, and it is easier for me and far more comfortable for the patient. All the best workmen I know use modeling compound. They will take such an impression and trim it up to get the contour they desire, and they will slightly warm that and put it in the mouth, and thus get a more perfect impression, and I

believe they get better results with modeling compound than they would with plaster.

A feature that appealed to me in Dr. Watkins's paper was the use of tinfoil, and the fact that comparatively few men use it for the reason they think they are spoiling the fit of the plate, which I know from experience is wrong.

Dr. Watkins offered to show the method of scraping the model preparatory to the use of tinfoil, and I, for one, would like very much to see him do that. Possibly it may clear up the point very nicely for some who may not comprehend it.

(Dr. Watkins then gave a demonstration of his methods and the discussion was closed.)

Discussion of Dr. Oliver's Paper.

I think that paper is a little classic. I like that word "apicoectomy." We have been using a misnomer in the past; we have been calling it amputation of the root! Anybody can amputate a root, but when it comes to apicoectomy, one must be a surgeon!

But seriously, it is not only a radical but a very rational operation, and only very recently the Second District Dental Society heard a paper read before it describing the non-efficacy of this operation. I wish the essayist who wrote that paper were present to-night to hear this one, because it does seem to me that surgery is the direct method of cure. In the first place it uncovers the seat of the disease and gives you an opportunity for visual examination, and instead of endeavoring to cure by medication, the cure is what might be called a common sense cure; the dead part is removed and the living parts are reinvigorated. I know that this operation can effect a cure because I submitted to it in my own mouth for a chronic abscess as long ago as the days when they had clinics on the corner of Broadway and Ninth Street. One end of that root was amputated twenty years ago, and the other end crowned by an expert in that line, Dr. Reitz, of New York, some ten years ago, and it is now the best tooth I have.

I do not think this operation is really very simple. When you consider the amputation of a root on the second lower molar, you are then in a dangerous neighborhood, and one very difficult of access; you are very close to the mandibular canal and meet considerable density of bone and it is very difficult to reach the apex of a root.

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I would like to ask the essayist when he closes, if he really thinks there is a great deal to gain by retaining that little flap, instead of depending on packing by gauze and allowing it to build up from the bottom.

Dr. J. P. Root,
Kansas City, Mo. Dr. Oliver is an army dental surgeon, and I know from my experience with him and from the reputation he bears in his home town that he would undoubtedly cut a man's leg off if he thought it necessary, to save a tooth (laughter).

The technique of the operation is very beautiful, although I think that in probably nine hundred and ninety-nine cases out of a thousand it is absolutely impracticable for one reason if no other, and that is the obtaining of the consent of the patient for such an heroic operation, for what the patient would consider a trivial trouble.

Dr. Ottolengui has had it done, but he is one of those reproducing natures; he can not wear out; so of course it would not affect him as it would the rest of us.

I have tried the amputation of roots in some cases where I have been successful, and I have been unsuccessful in others, and if it were not that I do not class myself as an oral surgeon, I might try it oftener.

Dr. W. F. Pruden. I have often had occasions where it seemed to me the operation described by the essayist might be useful. I do not believe I ever in my life excised a root. It seems to me that after cutting the root off, the ends of the root would never be in a healthy condition, but that they would cause some little discharge. There would be a part of the tooth that would never have pericementum on it, nor be attached to the live tissues; and as the operation never appealed to me—I never have tried it.

I think that if I hear enough discussion of this method and enough successes reported, I may some day try it, but up to the present day I have never done so and for that reason can not say very much on this subject.

Dr. Ottolengui. I want to ask Dr. Pruden to examine this tooth of mine and see if he finds any discharge.

Dr. Pruden. I will take your word for it.

Dr. Ottolengui. No; I want you to look at it.

(Dr. Pruden and several other members then proceeded to examine Dr. Ottolengui's mouth.)

Dr. B. F. Luckey,
Paterson. There is not anything in the paper I care to discuss, but it gives me pleasure to testify to my appreciation of the able manner in which the subject was presented and the interesting way in which the essayist described the process from beginning to end. As he said him-

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self there is nothing new perhaps in it unless it be the minutæ of technique.

It is an operation which I think a very small percentage of dentists would care to undertake and it is perhaps a good thing that most of us feel our inability to cope with such a situation successfully, so that we may be prevented from attempting it.

I think perhaps the necessity for the operation does not frequently occur. Perhaps we do not recognize the necessity as often as it does occur. In my own practice I do not recall ever having attempted it, and I think at the present time if such a condition presented I would be more apt to refer my patient to a specialist than to attempt it myself. Still I feel this paper has been both interesting and instructive.

Dr. Oliver's paper appeals to me very strongly
Dr. R. C. Hutchinson, and I think the society should be congratulated on
Brooklyn. this occasion. We all bear the degree of Doctor of

Dental Surgery, and the operation Dr. Oliver has described so beautifully to-night is dental surgery, and not necessarily oral surgery; and I believe that many of us are capable of performing such operations if we put our minds to the subject and employ the talents we should possess and which are perhaps latent in many of us.

My reason for rising to discuss this paper is because I have had a little experience during the past week that bears upon this point directly and may perhaps call to Dr. Pruden's attention one of the conditions that may sometimes cause a continuation of discharge from cases of this character.

Last Wednesday a patient came to me with a discharge from a sinus over the position from which an upper lateral root had been extracted. Nine years ago the lateral was abscessed and was filled without having had the abscess cured; subsequently the crown of the tooth broke away and the root was then crowned by another dentist, and the abscess allowed to continue. A year ago the patient went into the hands of still another dentist, after the crown had broken away and the root split. He extracted portions of the root, but there was a continuance of discharge after extraction. The case was then referred to an oral surgeon for treatment. The sinus was curetted and it was pronounced a case of necrosis. The surgeon claimed to have removed necrotic tissue, with very little result. A second operation was performed in which he said he removed healthy tissue, and the wound was packed forcibly with iodoform gauze on alternate days covering a period of a good many weeks, and still there was a discharge. Last Wednesday the patient came into my hands for treatment; I rather despaired of operating successfully, but proceeded to curette the sinus and bur it out. Dur-

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ing the process of burring I had my finger pressed on the gum above the position of the sinus and in burring I felt a vibration; the bur struck a hard object, which at first seemed to me like a piece of necrotic bone. But I found on a second examination that it was metallic. Then I went deeper and removed this broach (producing small broach). I will pass it around, but, gentlemen, be careful, for I would not lose it for the world. There was a broach imbedded in the bone and it was so deeply imbedded that it required considerable force to remove it.

I cleaned out the sinus and packed it lightly and saw the patient the following day, finding the wound absolutely clean. I have seen her several times since and there has been no recurrence of suppuration and no discharge of any kind; it is perfectly clean and healthy and is closing by granulation from the bottom, or inside.

I call your attention to this, for sometimes, where you have a persistent flow of pus, there may be a foreign body, and it is worth while to explore most thoroughly to find out whether there is an irritating body present.

I do not think I can add much to what has been
Dr. M. R. Brinkman. already said, but I listened with great interest to the reading of the paper.

When I was a young operator, I took it upon myself to try to amputate the root of a lower molar on one occasion, but I never saw the case after that, and I do not know whether the patient died or not—he never came back anyway.

And I know in many cases of abscess when, after treating them carefully, there is a persistent discharge of pus and a fistulous opening; in five cases out of ten if you take a small spoon excavator and scrape thoroughly and curette down to the apex of the root, it will heal up, and you can cure a great many in that way without amputation.

And I have in many cases extracted, whereas, had I then heard Dr. Oliver's paper, I should not have done so.

I have but one suggestion to offer in regard to
Dr. Barry. this operation. I attempted it myself a number of times during the year I spent in the hospital with more or less success, and I found that this was a very valuable point in the operation. After removing the root with the fissure bur, as Dr. Oliver says, especially a large, thick root, you will find as you go through with the fissure bur around the entire edge of the root there will be quite a sharp edge, and I noticed in some cases where I left that edge I did not have the success in granulation that I did have in others where I used a pear-shaped finishing bur and went around that root and

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removed that sharp edge entirely. I found that sharp edge acted more or less as an irritant and did not allow the granulation to take place as rapidly as it ought to.

However, I should like to say we had perfect success in the amputation of such roots and I always performed the operation whenever I had an opportunity to do so, partly for my own benefit. A number of cases were very stubborn and there was a discharge afterward, but by careful treatment that was all cleared up. I think that is entirely due to not cleansing the canal thoroughly. If the canal is thoroughly cleansed first you will not have very much trouble in getting a good, healthy granulation and healing it thoroughly.

Someone may deduce from my previous remarks that I do not believe in operations of this kind. I do. I have many times curretted with a large spoon excavator (instead of a small one), but I believe that the average dentist is not capable of doing this, although our degree announces that we are dental surgeons. We have not the ability and many times we have not the opportunity of perfecting ourselves as dental surgeons. If I had a case as extensive as that referred to by the essayist I would send it to an oral surgeon. Unless I had perfected myself as such I do not think I would attempt it.

I would like to ask Dr. Oliver how he would determine such a case, for instance, as came under my observation to-day.

The patient has a first molar crowned, the second bicuspid is crowned, and the first bicuspid has a very beautiful inlay. This patient is suffering with a discharge between the first molar and second bicuspid. How are we to determine just what tooth caused it? There is no resistance to percussion or any other method I know of, but there is a very considerable discharge from this little opening between the first molar and the second bicuspid. How will you determine which tooth is giving the trouble?

I shall endeavor to answer the last question first, although I must confess it is rather a hard proposition to make a long range diagnosis from merely the symptoms outlined by Dr. Stockton.

Usually, in cases like the one cited, I first introduce a blunt pointed silver probe into the fistula and by gentle pressure allow it to follow out the deviations of the tract and sinus until it points to one or the other of the affected teeth. In this particular case I would suspect the second bicuspid as the offending tooth, for the reason that fistulous tracts in this region usually open posteriorly; probably on account of gravitation,

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from the fact that an individual spends about one-third of his time in a recumbent position with face upward or nearly so. However, the fact that three teeth in this locality are affected does not necessarily mean that any particular one of them has the abscess; they may all have abscesses, leading into the same sinus. This point can only be determined by the probe, an exploratory operation, or the X ray.

I have had three cases of this kind lately, one being sent to me from a distant post, in which the operation developed that the patient originally had a chronic dento-alveolar abscess of the right lower first bicuspid, with subsequent involvement of the second bicuspid, first molar and second molar. Almost all of the alveolar process except the lingual plate and a portion around and between the necks of these teeth was necrotic, as also was a portion of the upper surface of the body of the mandible throughout this region. The fistulous tract opened externally on the cheek at a point about the anterior border of the attachment of the masseter muscle.

The operation for this case was an intra-oral one and consisted in the removal of all necrotic process and bone, excising the apices of three teeth, closing the wound with drainage after thorough curettement of external fistulous tract. The patient was discharged available for duty on the fifteenth day and has not had any further symptoms of trouble.

The operation described in my paper is neither a difficult nor a serious one. It should be performed by everyone who claims the degree of D.D.S., whenever in his judgment it is indicated. I am afraid we are inclined of late to take a too restricted view of dentistry; focusing down to the narrow confines of a tooth, disregarding the broadest possibilities of our professional field. If this be true it means digression from the highest attainments of dental surgery which we have so proudly acclaimed should entitle us to the world's recognition as a health conserving profession—a true branch of the great healing art of medicine. But, perhaps, it is only one of the many indications of that impending era when dentistry, like medicine and surgery, will break up into specialties. I would rather accept this theory than that our profession is showing any symptoms of degeneration.

I do not believe, as some one has suggested, that the severity of this operation or the dread of pain need cause any patient to refuse it. The simplest operation described can usually be performed almost without pain, certainly with very little, by the employment of local anesthesia—five per cent. hydro-chlorate of cocain injected into the area. In the larger and more complicated operations it is better to use one of the general anesthetics; it requires less time, is a great deal easier on the operator and patient as well.

Dr. Luckey's suggestion that patients are afraid of an operation is no doubt true, but when they are made to realize the insignificance of such a procedure in comparison with the beneficial health results and the saving of a tooth or teeth thereby, I am sure they will usually rely upon the advice given them by the operator who has gained their confidence.

In my present position I am singularly free from troubles of this kind. When a case presents that upon examination indicates surgical intervention, the patient is ordered to report at some subsequent date for operation, and you may rest assured he is there at that time and for that purpose, it being a matter of military discipline with him.

Taking up the point referred to by Dr. Barry, I will merely state that in the description I attempted to show that after removal of the excised apex from the sinus cavity, the large sized surgical bur was used to thoroughly cut out the cavity, removing all projecting edges and sharp margins, the sharp right-angled root margins included. I fully agree with him that this is a point essential to the early closure of wound.

As to the point brought up by Dr. Pruden, will say that if the root has been properly reamed out, rendered aseptic and properly filled with any kind of filling material, I think there will be no difficulty of that kind. In excising the apex of a root so filled, you cut through cementum, dentin and filling material, leaving a clean, smooth, flush sealed canal from which there can be no seepage. Subsequently the mass of granulation tissue completely encloses the root end and there can be no further trouble with it.

That is very true in cases where you can really know you reach that foramen; but frequently the very cause of the trouble was that you could not reach it, because of a constriction there preventing it. Now why would it not be proper—and I want to say I have done it—it is not just theory—to fill that root on the second day after the operation, when you can sterilize through the root thoroughly and be absolutely certain, after your operation is all over, and you can see both ends of the root—to close it at that end as well as the other. That is why I asked why it was essential to preserve that flap.

Dr. Ottolengui. In the first place the canal is cleansed and effectually sterilized; then it is reamed out to a gradual taper from external orifice to apex. Should the constriction be too small for reaming, it is drilled out, going clear through the end of root. There is seldom any pain from such procedure as the drill merely enters the sinus, and does not injure anything unless it is allowed to extend through and across the diameter of the sinus into live tissue.

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It makes no difference how much you enlarge the apical foramen, provided it is completely sealed later, nor how much filling material is forced through it, because it will all be subsequently removed with other extraneous matter. Then when the apex—about one-eighth inch—is cut off, the end of root is still sealed, and can harbor no infection. The objections to filling root-canal after the operation are many. It would be very difficult to keep a canal clear of bloody seepage long enough to thoroughly disinfect and fill it; then it would be almost impossible to cleanse and sterilize it without forcing some septic material through the canal into the now opened and sterilized sinus, and should this be successfully accomplished, you would be sure to force some of the filling material through, which would now become a serious matter, producing irritation to the new granulating surfaces, delaying healing of the wound and interrupting the union of flap margins, if not causing septic infection which might require reopening of wound, with removal of offending material, re-curettement of sinus and reclosure of external wound, this time with packing and drainage. It seems far better to thoroughly fill canal first, and thus avoid any of the above stated complications. The reason for making a flap operation is first to obtain observation and accessibility, and later to shut off the area of operation by thorough coaptation under strict antiseptic precautions, thus preventing subsequent infection.

Whenever it becomes necessary to leave the wound open and resort to packing, there is always danger of infection until the whole area is healed, and this liability is one to be avoided if possible. Such an accident would open up the possibilities of many dread complications, both local and systemic, that would preclude any possibility for success of the operation, and perhaps seriously menace the patient's health.

In cases of amputation of either the first or second bicuspid in the line of the mental foramen, where the inferior dental nerve is liable to be cut in the operation, would you undertake it in that position?

Yes; dento-alveolar abscesses producing necrosis around apex of a long second bicuspid, may encroach upon the mental foramen, or even the inferior dental canal. In operating for a case of this description, it would be better not to disturb the nerve trunk and vessels therein unless the success of the operation demanded it. This point being once decided, I believe in going boldly into the canal; cut off nerve, artery and vein if need be, control the resulting hemorrhage, and finish the operation. Hemorrhage from the inferior dental artery can be controlled during the operation, by packing the canal, afterward stopping it by torsion.



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grasping the ends with hemostats, pulling forward and forcibly twisting them upon themselves. Of course this operation is one of greater magnitude than the simpler one under discussion, and would require a general anesthetic, and the chiseling away of enough of the bony canal to get at artery and nerve trunk. While it is not often desirable to open into and disturb the contents of the inferior dental canal, it is not nearly as dangerous as generally supposed.

There is little to fear of uncontrollable hemorrhage during operation, and if it is handled properly not much dread of secondary hemorrhage, and while excision of the nerve trunk will produce an interruption of impulses and impressions further forward, in most cases this is merely temporary as a regeneration of nerve tissue may be expected within a few years.

Someone raised the point about the location of a sinus and the often distant opening of the fistula. I have seen one extreme case where a chronic dento-alveolar abscess of the first superior left molar, with purulent engorgement of antrum and necrosis of the maxilla, presented three fistulas, one immediately posterior to the maxillary tuberosity, one externally near the center of temporal fascia, and the other externally below the ear at about the angle of jaw.

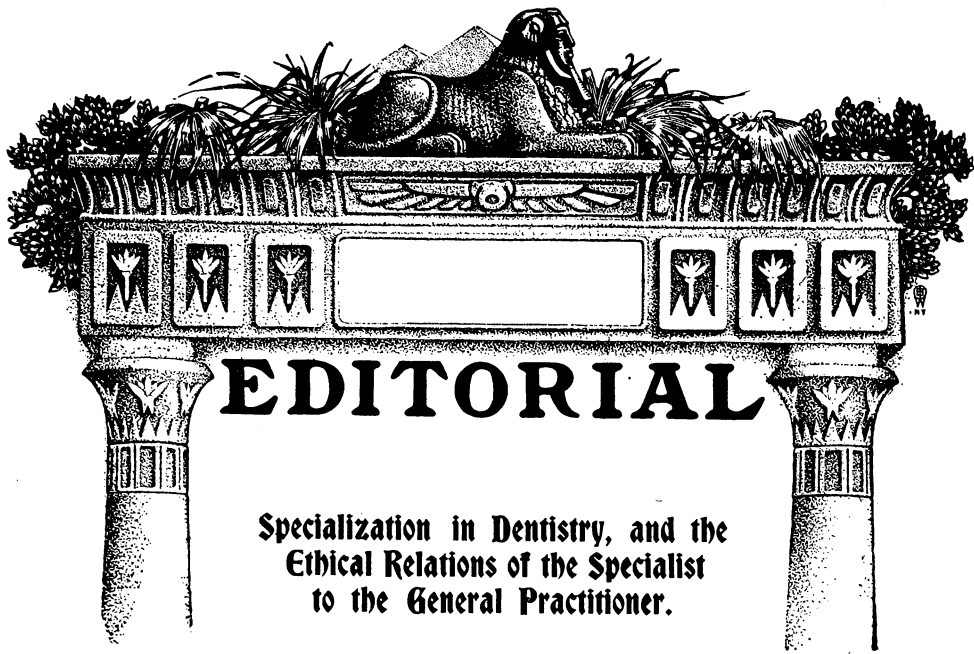
The operation consisted of partial excision of the maxilla (introrally), removing about two-thirds of the bone, leaving the nasal and orbital surfaces.

The patient recovered and reported back to his company for full duty in five weeks. Of course this was an exaggerated case, where the fistulous tract opened far away from the affected area, but here, as is usually the case, the silver probe followed out the devious channels and lead to the seat of original trouble.

On motion a vote of thanks was extended to Dr. Watkins and to Dr. Oliver for the papers of the evening.

On motion adjourned.





Since specialization has definitely entered the domain of dentistry, a number of problems in ethics have arisen, which must presently be discussed with liberality, and finally determined in accord with the best interests of the patient, who indeed in all such controversies should have our first consideration.

The primary difficulty lies in the fact that we have not as yet formulated definite limitations of the fields of the various so-called specialties, nor indeed have we universally adopted definitions of the words "specialty" and "specialist."

In England, for example, a dental specialist is a general practitioner who, aside from his general practice, announces that his "specialty" is—whatever it may be.

In the larger cities of the United States, following the accepted meaning of the word specialist as used by medical men, the dental specialist, like his medical brother, is the man who engages in a special work to the exclusion of all others. But this can not be so true in smaller places where the extent of the special work and the fees that



may be received would not compensate a man for devoting himself exclusively to a limited field. It is patent therefore that rules of conduct for the specialist must be formulated with some thought for the varying conditions under which the specialist is applying himself.

**The
Orthodontist.**

The orthodontist perhaps is the nearest semblance which we have to the specialist, in the medical sense, but even here the divorcement is not as yet complete. We have three classes of men "regulating teeth." The exclusive specialist, who announces that he does no general practice whatever. The general practitioner, who tells us that he "makes a specialty of orthodontia," and who sets aside the latter half of each week day and all of Saturday for orthodontic treatment. And lastly, the general practitioner who considers that orthodontia is a part of dentistry, and who regulates teeth, just as he would undertake any other service for his patients. With the last class the present discussion is not concerned.

With the exclusive specialist, however, the man who does not undertake any "general practice," the question must often arise "what is general practice, and what the limitation of orthodontia?" This question becomes very pertinent because of the fact that the exclusive specialist is constantly receiving patients recommended by men in general practice, who desire to know whether their own interests will be safeguarded when sending patients away for special service.

The man of the second class, he who has a regular practice but who "specializes in orthodontia," must at times be confronted by the same question, because if he have any standing at all he also will have patients referred to him by other dentists, and it is this man who is in the best position, perhaps, to offer a just solution of the question and for this reason:

Such a man has two classes of orthodontia patients; *viz.*, those sent to him by other dentists; and those sent to him by his own patients, and for whom, therefore, he is free to do any sort of work. For these he may fill a tooth at any time, and make his own choice of permanent or temporary materials. He may also use his own judgment in regard to the cleansing of the teeth. On the contrary, with the patients sent to him by other men he must often find himself in the same quandary as the ex-

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clusive specialist, and will frequently be confronted with the query "is this orthodontia or dentistry? Must I send this patient back to her dentist, or may I render this service myself?"

Possible Solution of the Problem.

When a child is entrusted to an orthodontist it is for a specific purpose; the parents desire the correction of the malocclusion, incidentally for the betterment of the child's personal appearance, but more particular as a means of decreasing the liability to caries. The high responsibility of the orthodontist, therefore, is not alone to regulate the teeth, but likewise to safeguard them against caries or other destructive agencies during the process.

He should of course refer his patient back to the recommending dentist for whatever work may be reasonably accomplished in that way, but not to the hindrance of his own work, nor against the best interests of the patient. For example, if during tooth movement a cavity should be discovered, the specialist should return the patient to the dentist, provided the dentist can give the child an appointment quickly enough not to interfere with the orthodontic work, and also provided the specialist feels that such a course would be as well for the patient as to undertake the filling himself.

It would probably save a great deal of friction between specialist and dentist, and at the same time best serve the patient, if the following course were universally pursued, thus marking a distinct limitation of the orthodontic field in this particular.

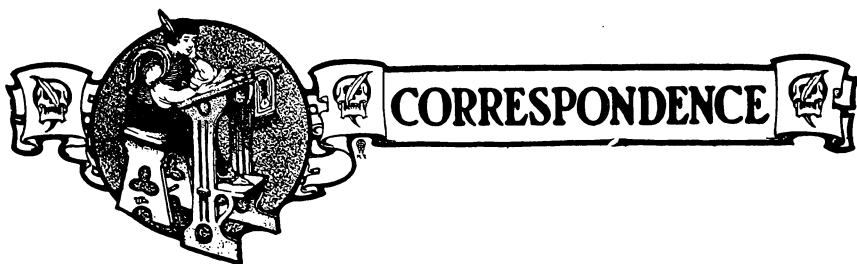
Before referring the patient, or at least before active treatment be begun, the dentist should place the mouth in thorough order, doing all permanent work indicated. The patient should then be given over to the specialist, upon whom the full responsibility should rest. During tooth movement, should a cavity or cavities be discovered, the orthodontist should himself decide whether permanent or temporary filling is demanded. Usually the latter will be best, considering that teeth in transit are more or less in a pathological environment, and therefore should be made to stand as little strain as possible. If, however, the specialist should decide that a permanent filling is required, the patient should invariably be referred back to the dentist for treatment. But if, as will most often be the case, the tooth may be conserved with a cement



filling, such filling should be promptly undertaken by the orthodontist. This saves his own time, and the patient's time; and moreover the permanent filling will more aptly be permanent if placed when tooth movement has been fully completed. The orthodontist can not be accused of selfishness in this course, for he receives no addition to his prearranged fee by rendering such work.

Prophylaxis. The cleansing of teeth, now rapidly becoming a higher art and having a broader significance under the term "prophylaxis," is also drifting toward specialization, but as yet is in a transition stage. The "prophylactist" has not yet quite arrived, though some dentists have assistants who devote themselves exclusively to this work and who thus acquire the expertness of specialists. Before the final advent of the "prophylactist" there can be no doubt that it should be entirely within the province of orthodontia to thoroughly cleanse the teeth, and if the orthodontist will do his duty in this matter there is no good reason why the referring dentist should expect constant returns of patients for tooth cleaning. As the situation is at present, the orthodontist might well consider the advisability of following the lead of the dentist by employing a skilled assistant to devote herself to prophylactic care of teeth during orthodontic work.





The Taggart Gold Inlay.—A Word of Caution.

Editor ITEMS OF INTEREST.

Dear Sir—The rapid development of the cast gold inlay has permitted one or two errors to creep into its technique. One of these is an error in cavity preparation. I refer to the inadequate protection of the pulp from thermal shock. This mistake arises from two causes. One is the pardonable pride we feel in the rapid sequence of the various steps of the operation, inducing the omission of our usual care in insulating the pulp. The other cause is a mistaken confidence in the insulating capacity of the film of cement which seals the filling. Realizing the practically perfect adaptation of the Taggart filling to its cavity walls, we know that all cement, except a thin film, must be expressed when the filling is forced home.

When the porcelain inlay is inserted after having its matrix stripped, there remains for the cement lining in most cases a space of about 1-1000 of an inch. With the cast inlay the film must be reduced to even less than this thickness, often limited only to the size of the granules of the zinc oxid powder.

Pounestone's experiments show that the average size granules in a good inlay cement are 10-15 microns in diameter or about 1-2000 of an inch, while the cement film, under twenty-five pounds pressure, could be reduced to 27 microns in thickness, but with numerous areas devoid of cement granules of any kind. This view is supported by the appearance of the cement lining in the several sectional specimens which I have examined. In these the cement was of exceeding thinness, being entirely absent in some parts of the cavity.

The thermal conductivity is greater in pure gold than in any of our filling materials and the majority of gold inlays now being made are what we would call large fillings, bringing a mass of metal into close proximity to the pulp. My observation is that these cases are showing marked

ITEMS OF INTEREST

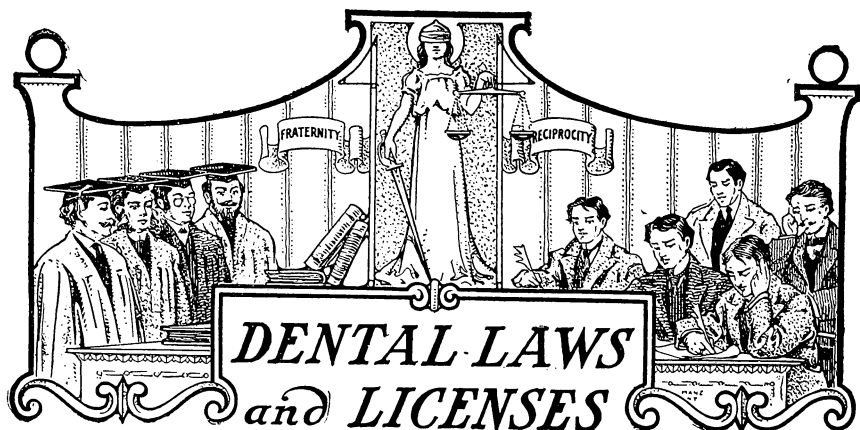
thermal irritation and if the practice continues we must have returning to us some embarrassing cases of pulpitis, to be treated by drilling through a mass of cast gold, which is always a difficult and painful operation.

The trouble may be avoided in several ways: First, by regularly building up a cement insulating intermediary with the same care that we have heretofore used; secondly, by carving from the pulpal surface of the wax model, previous to its investment, such a portion of the wax as will insure a fair thickness of cement over the pulp, making in effect a slightly hollow inlay; thirdly, by making use of a reliable quick drying cavity varnish plentifully applied over the pulpal walls before obtaining the wax model. These observations apply of course to teeth with vital pulps, but it would seem that in our new filling method we must consider that thermal conductivity is as great or a greater factor than heretofore.

H. T. SMITH, D.D.S.

Cincinnati, Ohio.





A Brief Guide for Dental Examiners.

Compiled by ALPHONSO IRWIN, D.D.S.

States that Interchange Licenses.

Oklahoma reports interchange with Arkansas.
 District of Columbia interchanges with New Jersey.
 Florida interchanges with States whose laws are equal to Florida's.
 Indiana interchanges with New Jersey.
 Michigan interchanges with New Jersey and the Canadian North-west Territories.
 New Jersey interchanges with Indiana, Michigan, Tennessee, Utah, Vermont and District of Columbia.
 New York interchanges with Pennsylvania.
 Oklahoma reports interchange with Arkansas.
 Pennsylvania interchanges with New York.
 Tennessee interchanges with New Jersey.
 Utah interchanges with New Jersey.
 Vermont interchanges with New Jersey.

Requirements for Licenses and Dates of Examinations.

Secretaries of State Boards are requested to keep us posted in regard to dates and places of examinations or any changes that may occur in their laws so that this guide may be kept accurately

ITEMS OF INTEREST

Examination required, with or without diploma.
Alabama. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations usually on the Monday before the second Tuesday in May each year. Secretary, Dr. Thomas P. Whitby, Selma, Ala.

Examination fee \$25. Board: President, W. G. Lentz, Phoenix; secretary, W. P. Sims, Bisbee; R. Roper, Prescott; E. H. Stiles, Tucson; C. E. Rhome, Douglass.

Examination, with or without diploma; applicants must attain an average of seventy-five per cent. to pass. Examination fee \$5. No special examination granted to practitioners already in practice; no temporary licenses. Oklahoma reports interchange with Arkansas, but the secretary of Arkansas reports no interchange as yet. Examination, Little Rock, Ark., November 27-29.

Board: President, C. Richardson, Fayetteville; secretary, A. T. McMillan, Little Rock; C. C. Sims, Dordenelle; E. L. Watson, Camden; C. G. Farrow, Little Rock.

Examination required with or without diploma.
California. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination at San Francisco.

Board: President, F. G. Baird, San Francisco; C. A. Herrick, secretary, Jackson; treasurer, E. G. Howard, Los Angeles; John M. Dunn, San Francisco; Russell H. Cool, San Francisco; Geo. A. White, Santa Barbara; Arthur B. Mayhew, Palo Alto.

Examination granted to holders of diploma only.
Colorado. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any State. Examinations first Tuesdays of June and December, at Denver, Col.

Board: President, T. H. Sutherland, Denver; secretary, R. P. McGee, Denver; Sarah M. Townsend, Denver; J. D. Harper, Trinidad; T. Ashley, Canon City.

Applicant for examination must have diploma, or must have had five years' instruction from a licensed dentist, or three years' practice as a legally qualified dentist. Examination fee \$25. Examination, November. A special clause permits reciprocal interchange of licenses in accordance

ITEMS OF INTEREST

with the Asheville resolution. Recorder, G. M. Griswold, Hartford, Conn.

State of Connecticut Dental Commissioners: President, Edward Prentis, New London; secretary, G. M. Griswold, Hartford; A. C. Fones, Bridgeport; H. G. Provost, West Winsted; D. W. Johnston, New Haven.

Delaware. Examination and diploma required in all cases. Examination fee \$10; \$1 for certificate. All applicants for certificates come under the same conditions.

No interchange of license with any other States. Examinations first Wednesday in January, April, July and October. Place of meeting given upon application. Secretary C. R. Jefferis, New Century Bldg., Wilmington, Del.

District of Columbia. Examination with or without diploma. Examination fee \$10. Reciprocal interchange of license with the State of New Jersey. Examinations semi-annually. Secretary, S. G. Davis, 607 13th Street, Washington, D. C.

Florida. Examination required with diploma. Examination fee \$10. No special examination for practitioners already in practice. Interchange of license with States whose laws are equal to Florida.

Board: President R. A. Shine, Tallahassee; secretary, W. G. Mason, Tampa; E. M. Sanderson, Jacksonville; F. B. Hannah, Umatilla; J. E. Chace, Ocala.

Georgia. *Board of Dental Examiners of Georgia:* President, John H. Coyle, Thomasville; D. D. Atkinson, secretary, Brunswick; W. G. Rambo, Atlanta; C. Z. McArthur, Fort Valley; Thomas Cole, Newman.

Idaho. Examination required with or without diploma. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any State. Examination, December. Secretary, C. E. M. Loux, Pocatello.

Illinois. Examination required, with or without a diploma. Examination fee \$20. License fee \$5. No special examination required for practitioners already in practice. No interchange of license with any other State. Examinations twice each year, usually in May and October. Secretary, J. G. Reid, 67 Wabash Avenue, Chicago, Ill.

Board: D. H. Dameron, President, Arcelo; secretary, J. G. Reid, Chicago; C. P. Pruyn, Chicago; T. W. Prichett, White Hall; C. R. Taylor, Streator.

ITEMS OF INTEREST

Indiana. Applicants for examination must possess diploma from recognized college or must have had five years' dental practice under a reputable practitioner of this State. Examination fee \$20. No special examination granted to practitioners already in practice. Reciprocal interchange of license with State of New Jersey in accordance with the provisions of the Asheville resolution. Applications must be in the hands of secretary by January 5th. Secretary, Dr. F. E. Henshaw, Middletown, Ind.

Board: President, M. M. Haas, Evansville; secretary, F. R. Henshaw, Middletown; Alex. Jameson, Indianapolis; J. S. McCurdy, Fort Wayne; W. H. Shaffer, N. Manchester.

Iowa. Examination required with diploma. Examination fee \$20. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination, Des Moines, December and May. Secretary, E. D. Brower, Le Mars, Iowa.

Board: President, F. H. Rule, Ackley; secretary, E. D. Brower, Le Mars; W. H. De Ford, Des Moines; E. H. Ball, Tama; G. N. Beemer, Mason City.

Kansas. All applicants examined. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Secretary, M. I. Hults, Hutchinson, Kansas.

Board: President, O. H. Simpson, Dodge City; F. O. Hetrick, Ottawa; M. I. Hults, secretary, Hutchinson.

Kentucky. *Board of Examiners:* J. R. Wallace, president; J. W. Jewett, secretary, Eminence, Ky.; C. R. Shacklette, E. D. Rose, C. W. McGuire.

Louisiana. *Board:* J. E. Woodward, president; L. A. Hubert, attorney; treasurer, R. L. Zelenka; C. Sidney Couret, C. D. Johnson, G. A. Colcomb.

Maine. *Board of Dental Examiners of the State of Maine:* President, Edward J. Roberts, Augusta; secretary, Dana W. Fellows, Portland; Langdon S. Chilcott, Bangor; Fred. O. Sawyer, Skowhegan; Edwin C. Bryant, Pittsfield.

Maryland. Examination required with diploma. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any State. Examinations occur twice annually in Baltimore. Secretary, F. F. Drew, 701 Howard Street, Baltimore, Md.

ITEMS OF INTEREST

Board: President, H. A. Wilson, Calvert Bank Bldg., Baltimore; secretary, F. F. Drew, Baltimore; Wm. T. Kelley, Easton; M. G. Sykes, Ellicott City; P. E. Sasscer, La Plata; W. W. Dunbracco, Baltimore.

Examination required with or without diploma.

Massachusetts. Examination fee \$20 for first examination; subsequent examinations \$5. No special examination granted to practitioners already in practice. No interchange of license with any States. Hereafter candidates for second and subsequent examinations will be required to fill out an application blank and forward it to the secretary as above. Every candidate for examination must be twenty-one years of age. Application blanks may be obtained from the secretary. Temporary licenses are never granted. Secretary, Dr. G. E. Mitchell, Haverhill, Mass.

Board: President, John F. Dowsley, 175 Tremont Street, Boston, Mass.; secretary, Geo. E. Mitchell, Haverhill; Dwight M. Clapp, Boston; Thos. J. Barrett, Worcester; Geo. A. Maxfield, Holyoke.

Examinations required with or without diploma.

Michigan. Examination fee \$10. Practitioners already in practice may have a special examination before any member of the Board which will enable him to practice until the next regular meeting of the Board, when a regular examination must be taken. Reciprocal interchanges of license with New Jersey, and with the Canadian Northwest Territories. Secretary, E. A. Honey, Kalamazoo.

Board: President, C. H. Oakman, Detroit; secretary, E. A. Honey, Kalamazoo; A. L. Le Gro, Detroit; W. C. McKinney, Saginaw.

Minnesota. Diploma must be presented from a dental college in good standing or satisfactory evidence must be given of having been engaged in the practice of dentistry as early as April, 1879. Examination fee \$10. No special examination granted to practitioners already in practice; no temporary licenses of any kind granted. No interchange of license with any States. Examinations held first Tuesday in April and October at the Dental Department of the State University at Minneapolis.

Board of Dental Examiners: President, Stanley Reed Holden, Duluth; secretary, Geo. S. Todd, Lake City; R. W. Berthel, St. Paul; F. S. James, Winona; J. W. Pemberthey, Minneapolis.

Examination required with or without diploma.

Mississippi. Examination fee \$10. Practitioners already in practice will be granted an examination by any member of the Board who is authorized to issue a temporary license, which will be valid until the next meeting of the Board. Only one temporary license

ITEMS OF INTEREST

shall ever be issued to the same applicant. Examinations, third Tuesday in May of each year. Secretary, P. P. Walker, Brandon, Miss.

Missouri. Examination with or without diploma. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations, second Tuesday in May and October at the Senate Chamber at Jefferson City. Secretary, S. C. A. Ruby, Clinton, Mo.

Board of Dental Examiners: President, R. D. McIntosh, Monett; vice-president, C. B. Coleman, Poplar Bluff; secretary, S. C. A. Rubey; T. E. Turner, St. Louis; H. B. Purl, Kirksville.

Montana. Examination with or without diploma. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Secretary, B. J. Keenan, Butte.

Board of Dental Examiners: President, G. W. Pelzer, Great Falls; secretary, B. J. Keenan, Butte; treasurer, W. A. Tudor, Bozeman.

Nebraska. Examination required with or without diploma. Examination fee \$25; except to Nebraska graduates, fee is \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Next examination by the State Board will be held at Lincoln, Neb., November. Secretary, H. C. Brock, North Platte, Neb.; president, J. H. Wallace, Omaha; W. T. Smith, Geneva; C. S. Parker, Norfolk; C. F. Ladd, Lincoln.

Nevada. Examination required of all graduates. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Secretary, C. A. Coffin, Reno.

Board of Dental Examiners: President, W. H. Cavell; secretary C. A. Coffin.

New Hampshire. Examination required with or without diploma. Examination fee \$10. No special examination granted to practitioners already in practice except by agreement of the full Board. No interchange of license with any States. Examinations at Manchester. Secretary, A. J. Sawyer, Manchester.

Board of Dental Examiners: President, G. A. Bowers, Nashua; secretary, A. J. Sawyer, Manchester; F. H. Brown, Lebanon.

New Jersey. Applicant must be a graduate of a reputable dental college and hold a high school diploma or a certificate from the State Superintendent of Public

ITEMS OF INTEREST

Instruction, Prof. C. J. Baxter, Trenton, N. J. Examination fee \$25. Reciprocal interchange of license with Utah, Tennessee, Indiana, Michigan, Vermont and District of Columbia. Examinations July and December. Practical and theoretical branches in the Assembly Chamber, Trenton, N. J. Secretary, Chas. A. Meeker, 29 Fulton Street, Newark.

Board: President, B. F. Luckey, Paterson; Chas. A. Meeker, secretary, Newark; Wm. E. Truex, Freehold; H. S. Sutphen, Newark; A. Irwin, Camden.

Examinations required with or without diploma.

New Mexico.

Examination fee \$25. Fee for certificate \$5. All licensed dentists within the Territory shall, on or before the first day of June of each year, register with the secretary of the Board, and shall pay therefor an annual fee of \$3. No special examination granted to practitioners already in practice. No interchange of license with any States. Secretary, C. N. Lord, Sante Fe, N. M.

New York.

Diploma from a registered school is necessary for admission to the dental licensing examination. Applicants who have had six years' practice in dentistry may on unanimous recommendation of the Board receive a license to practice in this State, provided they meet the necessary professional and preliminary requirements. Examination fee \$25. Reciprocal interchange of license with New Jersey and Pennsylvania. Chief, Chas. F. Wheelock. Examinations Division, New York State Education Department, Albany, N. Y.

Board of Dental Examiners: President, A. M. Holmes; secretary, Frank French; Fayette C. Walker, O. J. Gross, H. J. Burkhart, A. M. Wright, A. R. Cooke.

North Carolina.

Examination with or without diploma. Examination fee \$10. No special examination granted to practitioners already in practice. Secretary, R. H. Jones, Winston-Salem, N. C.

Board of Dental Examiners: President, V. E. Turner, Raleigh; Chas. A. Bland, Charlotte; secretary, R. H. Jones, Winston; J. E. Matthews, Wilmington; E. J. Tucker, Roxboro; Sid. P. Hilliard, Rocky Mount.

North Dakota.

Examination required with or without diploma. Examination fee \$10; additional fee for license \$5. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination second Tuesday in July. Secretary, H. L. Starling, Fargo, N. D.

Board of Dental Examiners: President, G. R. Leonard, Mandan;

ITEMS OF INTEREST

secretary, H. L. Starling, Fargo; R. S. Ramsey, Grand Forks; G. T. McDonald, Jamestown; C. F. Sweet, Minot.

The Board will register without examination all graduates of the Ohio colleges who make proper application and pay the required fee of \$10 prior to the session of the Board. All other applicants must be graduates and pass the examination before they can practice legally in Ohio. Examination fee \$20; registration fee \$10. There is an exemption clause which permits the Board to register a person who has been in practice in the State of Ohio continuously since January 1, 1903; this must be verified by evidence. Examinations held in Columbus. Applications should be filed with the secretary ten (10) days prior to examination. Secretary, H. C. Brown, 185 East State Street, Columbus, Ohio.

Board of Dental Examiners: President, Henry Barnes, 1415 New England Building, Cleveland; secretary, H. C. Brown, Columbus; treasurer, L. L. Barber, Spitzer Building, Toledo; J. K. Douglass, Sandusky; C. Stanley Smith, 142 East 4th Street, Cincinnati.

Examination required with or without diploma. **Oklahoma.** Examination fee \$25. No special examination granted to practitioners already in practice. Reciprocal interchange of license with Arkansas. Examinations in Oklahoma City. Secretary, A. C. Nixon, Guthrie, Oklahoma.

Board of Dental Examiners: President, W. W. Bryan, Claremore; secretary, A. C. Nixon, Guthrie; treasurer, F. C. Seids, Perry; M. W. Murray, Poteau; A. E. Bonnell, Muskogee.

Examination required with diploma. **Oregon.** Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States.

Examination required with diploma. **Pennsylvania.** Examination fee \$15. No special examination granted to practitioners already in practice. Reciprocal interchange of license with New York. Examinations, Philadelphia and Pittsburgh.

Board of Dental Examiners: President, D. E. Herain, Pittsburg; secretary, G. W. Slump, Williamsport; Charles B. Bratt, Alleghany; H. N. Young, Wilkes-Barre; H. B. McFadden, Philadelphia; H. E. Roberts, Philadelphia.

All applicants examined. Examination fee \$20. **Rhode Island.** No special examination granted to practitioners already in practice. In regard to interchange, the

ITEMS OF INTEREST

Board has recommended an amendment to the law giving the Board discretion. Secretary, W. S. Kenyon, 301 Westminster Street, Providence.

Board of Dental Examiners: President, Forrest G. Eddy, Providence; secretary, W. S. Kenyon, Providence; H. C. Grant, Providence; C. H. Davis, Pawtucket; A. L. Midgely, Providence, R. L.

Examination with diploma. Examination fee
South Carolina. \$15. No special examination granted to practitioners already in practice. No interchange of license with any States. Secretary, Brooks Rutledge, Florence, S. C.

Board of Dental Examiners: President, G. F. S. Wright, Georgetown; secretary, B. Rutledge, Florence.

Applicants for examination must have diploma
South Dakota. or must have had three years' practice immediately preceding examination. Examination fee \$10; license fee \$5. No special examination granted to practitioners already in practice. No interchange of license with any State. Examinations at Sioux Falls. Secretary, G. W. Collins, Vermillion, S. D.

Board of Dental Examiners: President, F. W. Palmer, Madison; secretary, G. W. Collins, Vermillion; F. E. Field, Sioux Falls; J. G. McCarty, Mitchel; Ernest H. Wilson, Miller.

All applicants must possess diploma and pass
Tennessee. a written examination, both theoretical and practical. Examination fee \$5. No special examination granted to practitioners already in practice. Reciprocal interchange of license with New Jersey, in accordance with the provisions of the Asheville resolution. Secretary, F. A. Shotwell, Rogersville, Tenn.

Board of Dental Examiners: President, W. H. P. Jones, Nashville; secretary, F. A. Shotwell, Rogersville; J. M. Glenn, Jackson; John R. Beach, Clarksville; Southall Deckson, Bolivar; B. D. Brabson, Knoxville.

Registers diplomas and examines all others.
Texas. Examination fee \$10. Temporary licenses granted to holders of diplomas between meetings of the Board; good until the following meeting. Temporary licenses granted to others after an examination by any member of the Board; good until the next meeting of the Board. Fee for temporary license \$2.

Board of Dental Examiners: President, Dr. J. H. Grant, Palestine; Dr. H. Lubbin, vice-president, Galveston; secretary, Dr. Bush Jones, Dallas; Dr. S. G. Duff, Greenville; Dr. J. M. Murphy, Temple; Dr. C. M. McCauley, Merkel.

ITEMS OF INTEREST

Utah. Examination required with or without diploma. Examination fee \$25. No special examinations granted to practitioners already in practice. Reciprocal interchange of license with New Jersey in accordance with the provisions of the Asheville resolution. Examinations usually in April and October. Secretary, A. C. Wherry, Salt Lake City, Utah.

Board of Dental Examiners: President, A. C. Clawson, Salt Lake City; secretary, A. C. Wherry, Salt Lake City; H. W. Davis, Salt Lake City; E. A. Tripp, Salt Lake City; W. C. Dalrymple, Ogden.

Vermont. Examination required in all cases. Examination fee \$25. No special examination for practitioners already in practice. Board is empowered to make interchange of license, in accordance with the Asheville resolution. Interchanges with New Jersey. Secretary, G. F. Cheney, St. Johnsbury, Vt.

Examinations required with or without diploma.
Virginia. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any State. Examinations in Richmond. Secretary, R. H. Walker, Norfolk, Va.

Board of Dental Examiners: President, H. W. Campbell, Suffolk; secretary, R. H. Walker, Norfolk; B. Bridgeforth, Richmond; R. C. Lewis, Culpepper; J. A. Colvin, Charlottesville; J. B. Stiff, Fredericksburg.

Examination required with diploma. Examination fee \$25. No special examinations granted to practitioners already in practice. No interchange of license with any State. Examinations in May and November. Secretary, C. S. Irwin, Vancouver, Washington. President, E. B. Edgars.

Examination required with or without diploma.
West Virginia. Examination fee \$10. No special examination granted practitioners already in practice. No interchange of license with any State. Examination in Charleston, W. Va. Applications should be filed with the secretary. Application blanks and all necessary information furnished by the secretary. Secretary, H. M. Van Voorhis, Morgantown, W. Va.

Examination required of all applicants and only holders of diplomas from reputable dental colleges are eligible to such examinations. No dentist can begin the practice of his profession in this State without first making application for an examination to the secretary of the Board and at the same time paying the examination fee of twenty-five dollars and sub-



ITEMS OF INTEREST

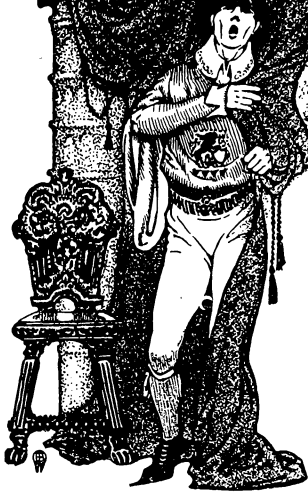
mitting his diploma for inspection. The applicant will then be examined at next meeting of Board, and if he passes a satisfactory examination a license will be issued to him. Until he receives this license he is not authorized to begin practice, and no license can be granted under the law except at a regular meeting of the Board. The possession of a diploma in itself gives no right to practice in this State. The time, date and place of examination are set by the Board. All applications must be completed and in the hands of the secretary thirty days prior to time set by the Board for examinations to begin. Secretary, Peter Appel, Jr., P. O. Box 346, Cheyenne, Wyoming.

Board of Dental Examiners: President, Wm. Frackelton, Sheridan; secretary, Peter Appel, Jr., Cheyenne; treasurer, W. C. Cunningham, Evanston.

Wisconsin. Examination required with diploma. Examination fee \$10. Dentists who have practiced four years or who have been apprenticed to a reputable dentist for five years are entitled to examinations. No special examination granted to practitioners already in practice. No interchange of license with any State. Examinations at Milwaukee. Secretary, J. J. Wright, 1218 Welles Bldg., Milwaukee, Wis.

Board of Dental Examiners: President, F. A. Tate, Rice Lake; secretary, J. J. Wright, Milwaukee; C. S. McIndoe, Rhineland; Chas. H. Seegar, Manitowoc; C. C. Marlowe, Lancaster.





SOCIETY ANNOUNCEMENTS

National Society Meetings.

American Society of Orthodontists, Washington, D. C., November 2, 3, 4, 1908.

State Society Meetings.

Ohio State Dental Society, December, 1908.

Southern Illinois Dental Society, Greenville, Ill., October 27, 1908.

The International Dental Federation.

My Dear Colleague—We are sending you the full programme of the meeting to be held at Brussels on August 6, 7, 8 and 9, 1908, by the International Dental Federation.

We have succeeded in realizing our hopes of last April, of holding a meeting at Brussels. We are very much pleased to see our Belgian brethren answer our invitation in large number, and the result has been the foundation of the Belgian Dental Federation. It is now making grand preparations for a suitable reception to the delegates of other countries.

Our meeting will be very important and interesting. We want to make it a sort of preparation for the Berlin Congress. For that reason the order of the day of the principal committees contains the study of the most important subjects to be submitted at the congress.



We direct your particular attention to this subject, and we hope that you will point out at the Brussels meeting the two or three questions that are really the most important. We must try to make each meeting a sort of milestone on the road of progress; such should be the main object of our I. D. F. We know that you will co-operate with us for that purpose.

With cordial wishes, we remain,

Yours very truly,

DR. E. SAUVEZ, Vice-President,

Paris, France.

For the President.

P. S.—We request those intending to be at the Brussels meeting to notify Dr. Rosenthal, President of the Belgian National Dental Federation, No. 1 Place du Trone, Brussels, Belgium.

**Programme of the Brussels Meeting,
August 6, 7, 8 and 9, 1908.**

Thursday, August 6, at 8.30 P. M.

Reception of members of the I. D. F. by the Belgian Dental Federation at the "Régence Tavern," Place Royale No. 14-15.

Friday, August 7, at 9 A. M.

General opening assembly at the "Maison des médecins" in Brussels.
Address by the vice-president.

Speeches by delegates.

First meeting of the Executive Committee.

Report of the general secretary.

Report of the treasurer.

Notices of resignations; admission of new members.

Constitution of the "Commission consultative internationale d'enseignement."

Election of members of various committees.

The I. D. F. and the Buda-Pest Congress.

Report of the International Stomatologist Association.

Preparation for the Berlin Congress. (This important question will receive attention.)

Election of president of the I. D. F.

Friday, August 7, from 2 to 6 P. M.

MEETING OF COMMITTEES.

1. Schools Committee.

Final adoption of the minimum programme and of the ideal programme of dental schools.



SOCIETY ANNOUNCEMENTS

Questions to be submitted to the Berlin Congress on the following subjects:

- (a) Anatomy, dental physiology and histology.
- (b) Special pathology.
- (c) Operative dentistry.
- (d) General and local anesthesia.
- (e) Prosthesis, dental orthopedia and facial restoration.
- (f) Teachings of the dental art.

Up-to-date demonstrations to be proposed to the organizers of the Berlin Congress relating to:

- (a) Operating dentistry.
- (b) Anesthesia.
- (c) Orthodontia.
- (d) Prosthesis.

Dr. Amoédo—Report on the dental schools of Spain, Portugal, and Latin America.

L. Subirana—Apparatus for the didactic teaching of orthodontia.
Various propositions.

2. Committee of Hygiene and of Public Dental Services.

Adoption of Professor Miller's pamphlet.

Report on Mr. Withaus' book: "Regular Registration of Dental Treatment of School Children."

Questions concerning hygiene and public dental services to be presented at the Berlin Congress.

Various propositions.

3. Press Committee.

Report on the national bulletins of the I. D. F.

Proposition to publish in Esperanto a summary of the work of the I. D. F.

Various propositions.

4. Committee of Dental Art History.

L. Subirana—Tryptic tableau on the discovery of anesthesia by Horace Wells.

Questions to be submitted to the Berlin Congress.

Various propositions.

5. Committee on Dental Service in the Army and Navy.

Klingelhofer—Report on measures concerning dental hygiene in the armies and navies of different countries.

Propositions to be submitted to the Berlin Congress.

Various propositions.

ITEMS OF INTEREST

6. Committee on Dental Jurisprudence and on Deontology.
Report on the best means to fight the illegal practice of the dental art.

Report on the penalties imposed in some States.
Questions to be brought up before the Berlin Congress.
Various propositions.

7. Committee on Terminology.
Report on dental terminology.
L. Subirana—Report on dental terminology and nomenclature.
Huet—Method of decimal classification applied to odontology and stomatology.
Various propositions.

8. Consultative Committee of International Schools.
Report on the proposition of Mr. Guillermin on the degree of doctor in dental surgery.
Various propositions.

9. Committee on the "Fondation Miller."
Report of Dr. Rose, president, and propositions of the committee.

Friday, August 7, at 8.30 P. M.

Meeting at Vaux Hall, rue Royale; concert; ladies will be welcome.

Saturday, August 8, at 9 A. M.

VARIOUS DEMONSTRATIONS AND PRESENTATIONS.

At the "Policlinique libre," 26 rue des Eperonniers, operation by Dr. Brophy, of Chicago.

At the "Maison des Médecins," A. Korbitz, of Berlin, "Some New Problems of Orthodontia"; S. Totwen, "The Reimplantation"; Solbrig and Platschick, demonstrations of apparatus for bridge work.

Saturday, August 8, from 2 to 4 P. M.

Meetings of committees.

Saturday, August 8, from 4 to 6 P. M.

Second meeting of the Executive Committee.
Report of financial examiners.
Publication of minutes of meetings of the I. D. F.
Report of the treasurer.
Reports from various committees and discussion of same.
Various propositions.



Saturday, August 8, at 7 P. M.

Banquet of the I. D. F. at the "Taverne Royale," rue d'Arenberg.

Sunday, August 9.

Excursion to the "Soignes" Forest.

Lunch offered to the members of the I. D. F. by the National Dental Federation of Belgium.

Visit to the Tervueren Parc, and to the Congo Museum.

At 5 P. M., at Tervueren, a tea party offered by our colleague, Mr. Bôn, dentist at Tervueren.

First District Dental Society, State of New York.

PRELIMINARY NOTICE.

The Executive Committee of the First District Dental Society of the State of New York have arranged for a section in "Eclectic Orthodontia," commencing early in October. This course will include lectures, lantern slide exhibits, and practical cases by the most eminent orthodontists in the country.

The expense for joining this section will be very slight. Lectures will be held once a week in the College of Dental and Oral Surgery of New York.

Application for this section should be made early in September to the chairman, Dr. Wilbur M. Daily, 19 East 69th Street.

The Second District Dental Society and the combined dental societies of New Jersey are invited to join this section.

At the first meeting of this society, October 13th, a paper will be presented by Dr. J. Lowe Young. Subject: "Early Treatment of Malocclusion of the Teeth." This paper will be discussed by eminent orthodontists.

Please make note of date.

Fraternally yours,

DR. S. G. PERRY,

DR. H. S. DUNNING,

DR. W. W. WALKER, Chairman,

58 West 50th Street,

New York City,

Executive Committee.



Harvard Dental Alumni Association.

At the thirty-seventh annual meeting of the Harvard Dental Alumni Association held in Boston, June 22, 1908, the following officers were elected for the ensuing year: President, Lyman F. Bigelow, '86, Boston; secretary, Waldo E. Boardman, '86, Boston; treasurer, Harold De W. Cross, '96, Boston.

Executive Committee: Waldo E. Boardman, '86, chairman ex officio, Boston; David F. Spinney, '00, Brookline (term expires 1909); Charles E. Parkhurst, '97, Somerville (term expires 1910).

Trustees of Life Membership Fund: H. De W. Cross, '96, treasurer ex officio, Boston; Joseph L. Paul, '91, Boston (term expires 1909); Frank T. Taylor, '90, Boston (term expires 1911).

Committee on Nomination and Election of Officers for 1909: Robert T. Moffatt, '95, Boston; George H. Wright, '03, Boston; Arthur J. Oldham, '90, Boston.

WALDO E. BOARDMAN, Secretary.

Mississippi Dental Association.

At the meeting of the Mississippi Dental Association, held at Jackson, Miss., June 9, 10 and 11, the following officers were elected: President, Dr. W. R. Wright, Jackson; first vice-president, Dr. C. F. Boger, Natchez; second vice-president, Dr. W. H. Reahm, McComb, Miss.; secretary, Dr. L. B. Price, Corinth; journalist, Dr. E. A. Johnson, Holly Springs.

Southern Wisconsin Dental Association.

Southern Wisconsin Dental Association officers elected at Platteville for the ensuing year: President, J. H. Reed; first vice-president, G. E. Cleophas; second vice-president, D. H. Chase; secretary, C. W. Colver; treasurer, W. G. Hales. Next place of meeting Beloit.

Clinton, Wis.

C. W. Colver, Secretary.

Iowa State Dental Society.

The Iowa State Dental Society at its annual meeting held recently in Des Moines, elected the following officers for the ensuing year: President, Dr. C. W. Bruner, Waterloo; vice-president, Dr. F. M. Hunt, Des Moines; secretary, Dr. T. F. Cooke, Burlington; treasurer, Dr. G. W. Slingluff; superintendent district societies, Dr. R. H. Volland, Iowa City.